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POISONOUS PLANTS IN ZULULAND AND AFGHANISTAN.

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THE value of a knowledge of botany to veterinary surgeons has long been recognized, and this recognition has had a practical result in the institution of a course of botanical instruction at the veterinary schools in this country. In this respect, it is true, we have only followed the sister branch of medicine, in which this most useful and fascinating science has for more than a century held a prominent place in the curriculum of medical tuition; while many of the most distinguished botanists the world has yet seen—Linnæus, for instance—have been graduates in medicine. But in veterinary education, botany still holds an extremely subordinate position at our schools, and it is to be feared that our graduates, as a rule, know very little more than the salient facts of structural botany—the higher and far more important division of systematic botany being scarcely, if at all, touched upon, through lack of time, opportunity, or failure to perceive the necessity for a more thorough knowledge of the whole subject. And yet it must be evident that if a tolerably familiar acquaintance with this science is necessary for the medical man, it must be still more so for the veterinary surgeon, seeing that the most valuable of the domestic animals find their sustenance

entirely in the vegetable kingdom—the pig, dog, and cat alone forming a partial exception. And if a somewhat thorough and extensive knowledge of botany is essential to the successful practice of veterinary medicine, in what we may designate "civil life," it will be conceded that for the army veterinary surgeon it is yet more required. When we consider the immense extent of the British Empire—embracing, as it does, pretty nearly every region of the habitable globe, and therefore every kind of climate; that there is rarely a period in which we are not at war in some corner or other; that more frequently than not these petty wars are carried on in uncivilized regions, about which little is known—and especially the botany; that animals of some kind or another have to be employed in the prosecution of these wars; that the food of these animals has to be obtained partly or entirely at the seat of war, and that they are exposed to great risk from eating poisonous plants;—when we consider all this, it must be granted that a good knowledge of botany is an absolute necessity for the army veterinary surgeon, from a merely professional and utilitarian point of view, not taking into consideration the opportunities he has of increasing our stock of botanical lore, were he competent to do so.

The wars in Zululand and Afghanistan, but particularly the former, have shown the force of these remarks most clearly, and the lesson will, I hope, not be lost. They have also once more given evidence of what has been often remarked, that the instinct of animals, with regard to the selection of food—striking though the manifestations of this instinct may be—does not always serve them when transferred from their native country to another in which the vegetation is strange to them.

Though a large portion of South Africa has been in our possession for a long period, and though many scientific explorers have wandered over it at various times, yet, strange to say, previous to the departure of mounted corps from this country, less than twelve months ago, to take part in the campaign in Zululand, I could discover very little pertaining to what I may term its Veterinary Botany. All that could be found was contained in an interesting paper by Dr. John Shaw, "On the Disturbing Influence of Extensive Sheep-farming on the Vegetation of South Africa"

(*Journal of the Linnean Society, Botany*, vol. xiv., p. 208), in which he speaks of a very few poisonous herbs—some *Asclepiads*, poisonous *Tripteres*, and the intoxicating *Melicæ*—the "Dronk grass" of the Dutch colonists. He states, also, that "some tracts of country are poisoned by the extraordinary increase of the *Tripteris flexuosa;* and transport riders (drivers), with their oxen—our only carrying power—have to travel through certain parts of the country without pausing, on account of the *Melicæ*, grasses which have increased to an extent scarcely to be fancied in the last two years, and on eating which cattle become afflicted with intoxication to an alarming extent." Dr. Shaw's remarks appear to refer more particularly to the Cape Colony, and he lays stress upon the need for its adopting measures "to keep one of its richest tracts from becoming a desert, or a region of obnoxious and poisonous plants." And in an excellent little work on the medicinal plants of South Africa, by Dr. Pappe, entitled "Floræ Capensis Medica Prodromus; or, An Examination of South African Plants, used as Remedies by the Colonists of the Cape of Good Hope" (second edition, published at Cape Town in 1857), *Diœcia monadelphia* is incidentally mentioned as poisonous to cattle. This is a shrub found in almost every part of the colony, the roots being well known to the Dutch as "Davidjes"; its leaves are petiolate, blunt, entire, and glabrous.

Soon after the arrival of our mounted reinforcements in Zululand, and when they commenced to march and were compelled to graze the horses and oxen, reports became current of many deaths occurring from eating poisonous plants; and in a few months—through the kindness of Inspecting Veterinary Surgeon Gudgin and Veterinary Surgeon Glover, Royal Artillery, and the courtesy of Mr. J. Collins, Principal Veterinary Surgeon—we received a number of specimens of what were collectively named *Tulp* or *Tulip plant*, but which were in reality four different kinds. Whether they are all poisonous is doubtful, seeing that at least three receive one common designation—that of *Tulp* or *Tulip*; but as two were certified by persons who were familiar with them, and who were cognisant of their having caused the death of animals which ate them, as being the real *Tulp*, these more particularly deserve notice. The third I will merely allude

to as an *Irid*, known to botanists as *Vieusseuxia tripetaloides* (De Candolle); the root is a corm, and was gathered at Dundee by a farmer who called it *Tulp*, and stated it was poisonous. It may be so, as it belongs to the same order as another specimen sent, which has been identified as poisonous to human beings, and with every probability to animals.

One of the remaining two plants was gathered at the now celebrated Rorke's Drift, and is known to have killed a large number of Mr. Rorke's cattle some years ago. The specimen was verified by Mr. Bell, a farmer there, as the true *Tulp*. This is an *Amaryllid*, and is identified as the *Cyrtanthus breviflorus* of Harvey. It is a narcissus-like plant, and has been recently made the type of a new genus by Mr. Baker, (our best authority on "bulbous plants"), and is his *Anoiganthus breviflorus*; he describes it as follows in the *Journal of Botany* for 1878 (p. 76):—

Bulb ovoid, an inch in diameter, with a short neck, and very dense tuft of slender root-fibres. *Produced leaves* generally three, contemporary with the flowers, lorate, obtuse, half to three-quarters of an inch broad, about a foot long when fully developed. *Scape* slender, terete, varying in length according to situation, from a couple of inches to a foot or a foot and a half. *Umbel* two to ten-flowered. *Bracts* one or two, lanceolate, one and a half to two inches long. *Pedicels* finally one to two inches long, erect in all stages. *Ovary* green, oblong, an eighth of an inch long; tube a quarter to three-eighths of an inch long, funnel-shaped; limb half to three-quarters of an inch long, whitish; segments equal, lanceolate, acute. Three upper *stamens* reaching half way up the limb, the three lower just out of the throat. *Anthers* pale yellow, oblong, half an inch long; *filaments* a quarter to one-third of an inch. *Style* overtopping the stamens, with three falcate stigmatose lobes thickened at the tip. *Perianth* persistent till the fruit is half formed. *Capsule* membranous, oblong, or turbinate, half to three-quarters of an inch long, each cell filled with compressed seeds. Native of Natal. At 5,000 feet, on Mount Kondewelde, of the Sneeuwbergen range, in December, 1872, it was found in leaf and flower by Bolus. It also grows in damp places on the Baziya hills, Transkeian Kaffraria, as well as in marshy plains at Beaufort, and on the damp table-land of Mount Boschberg.

No mention is made by Baker of the poisonous properties of this plant, but from the descriptions of its habitat and other characters, it would appear to be one of the toxic specimens met with during the expedition.

The remaining plant is an *Irid*, and is the *Morœa collina* of Thunberg, but is perhaps better known to botanists as *Homeria collina*. It is described in the *Botanical Gazette*, at page 1033, by the former name, and by Pappe by the latter.

Pappe mentions that it is known to almost every child in Cape Colony as the "Cape Tulip," and he introduces it into his pamphlet, not because of its therapeutical use, but because of its obnoxiousness. The poisonous qualities of its bulbs, he adds, appear to have been known to some extent years ago, but judging from the rapidity with which death ensued in a recent case, when they had been eaten by mistake, it must be of a very poisonous kind.

He gives particulars of a case of poisoning by this bulb, from which it appears that a Malay woman somewhat advanced in years, with her three grandchildren, partook of a supper consisting of coffee, fish and rice, and ate along with this a small basinful of *Homeria collina*. The exact quantity each ate was not ascertained. About one in the morning the woman awoke with severe nausea, followed by vomiting; she found the children similarly affected, and endeavoured to call for assistance, but could not, and was too weak to leave her bed; and when at five o'clock aid came, the eldest child was *moribund*, and expired almost immediately. Another child died an hour afterwards, and the other was in a state of collapse, almost insensible, with cold extremities, pulse scarcely fifty and irregular, and pupils much dilated. The symptoms of the grandmother were similar, but not so acute, and were accompanied by constant efforts at vomiting. By resorting to diffusible stimulants, she and the child eventually recovered.

The body of the eldest child was examined twelve hours after death. Marks of intense Gastritis were found, particularly about the cardiac and pyloric orifices. The inflammation extended throughout the whole course of the small intestines, and there was great venous congestion of the brain. Obstinate constipation prevailed in this case. As the roots of the plant were boiled before they were eaten, it would appear that the poison is not dissipated by boiling water.

Another instance is recorded in which a party consisting of three Hottentots, two women, and a slave, all partook of these roots—which the Dutch call "Uyntjes"—previously roasted in ashes. They all perished in great agony, except the slave, who only ate one bulb.

Nothing is said by Pappe as to its toxical action on animals. He gives the following description of the plant, which corresponds with that of the specimens sent by Gudgin and Glover:—

Root, a corm or tuberous bulb covered with a fibrous, reticulated, hardened coat. *Shaft* erect, smooth, paniculately branched. *Branches* 2-3 flowered. *Spathe* 2-valved, awned. *Radical-leaf* strap-shaped, narrow, caudate, concave, abruptly-pointed, outreaching the shaft. *Cauline-leaves* 2-3 much smaller. *Corolla* ephemerous, of a yellow or vermilion colour.

The evidence of the Army Veterinary Staff in Zululand, with regard to the "Tulip Plant," is particularly interesting and valuable. Mr. Gudgin and Veterinary Surgeon Longhurst, 1st Dragoon Guards, remark that it is called by the Kaffirs and Zulus "Indhlalata," and by the Dutch "Tulp" (Tulip?); that it

makes its appearance with the young grass, and is readily eaten by cattle. Longhurst, writing from Camp, Conference Hill, in August, reports that "it is very abundant at this period of the year, and quickly grows after the *old* grass has been burned, and before the *young* grass appears; so that it is easily conceived how ravenously it is sought after and eaten by the majority of herbivora." It grows in most parts of the colony, but is most abundant in the neighbourhood of streams and swampy ground ("vleys"). It has, however, been found at an elevation of 3,000 feet, according to Mr. Gudgin. When mature it is about a foot and a half high; has a delicate, buttercup-like flower of a yellow, golden yellow, or pink colour. The stalk is leek-like, root bulbous, and when pulled from the ground it emits a very rank and pungent odour. It grew so thick at Landman's Drift, that in some of the "mealie" (Indian corn) gardens, it looked as if cultivated.

The losses incurred through horses and cattle—especially when these are newly imported—eating the plant appear to be very serious. Rorke lost a large number of his oxen; and one farmer informed Mr. Gudgin that on the banks of the Umlazi river, about twenty miles from Pietermaritzburg, he lost twenty-seven horses in one day from "Tulip-poisoning." Mr. Longhurst states "that since being on this campaign, I have been called to many scores of private and attached Government horses, trek (draught) and slaughter oxen, which have been reported to me as suffering (in vulgar parlance) from 'gripes,' and upon careful inquiries I have found that these patients have been grazing near water, on 'vleys' which more or less abound in our encamping-grounds. Upon examination of my patients affected with the vegetable poison, I have always found them in extreme agony, and presenting all the characteristic symptoms of flatulent colic, being frightfully tympanitic. . . . . During this campaign I have not seen or heard of a case of 'tulip-poisoning' amongst mules, and account for it by the fact that they invariably, when out-spanned and at large, make for high ground among the rocks and mountains."

Mr. Gudgin gives the symptoms as colicky pains and giddiness; as the system comes more under the operation of the poison the enteric symptoms increase, partial paralysis of the

hind extremities ensues, and eventually the paralysis is nearly general, when death ensues. He notes that cattle bred in the districts where the plant grows are said not to be affected by it; though, it is added, this immunity is rather supposed to be due to the animal's instinct in avoiding it. In some cases the stomach is found ruptured after death, the rupture being due to the extreme distention of the intestines with gas. Death from Asphyxia may also be produced by acute tympanitis.

A very alarming instance of Tulip-poisoning is reported by Veterinary Surgeon Lambert, as taking place among the horses of the 17th Lancers at Landman's Drift, on May 25th, no fewer than thirteen cases occurring in one night. Ten of the cases happened in the left wing of the regiment, seven of which died, and three in the right wing—all of which recovered. It appears that the horses of the regiment were, by order of the Commanding Officer, taken, on the afternoon of the 25th, to entirely fresh grazing-ground. That night one horse died suddenly, and another succumbed during the night; next morning a number of horses were found lying prostrate, with head outstretched, and apparently in a state of collapse. The respiration was not much disturbed; the tongue was coated and white; visible mucous membranes injected; there was slight puffiness about the eyes, which, after a time, were retracted in their orbits; the lower lip was pendulous. In some instances much abdominal tympany was observed early, but it was present in all towards the end. Four more horses died on the 26th, and two on the night of the 27th. Obstinate constipation was usually present, but in one or two cases there was diarrhœa towards the termination. The horses (all English) were lying prone, and tranquil; but at very long intervals symptoms of colicky pain were manifested. The cases were at first treated for Colic, but after the first two *post-mortem* examinations the presence of poison was suspected. There was inflammation of the villous mucous membrane of the stomach, and in three cases rupture of that viscus—due, probably, to the tympanitis; the intestines were slightly inflamed in places, and their contents, as well as those in the stomach, were very well digested, moist, and normal in appearance. All the other parts of the body, including the lungs, were healthy.

Mr. Lambert incidentally remarks that on the afternoon of the 26th, four of their Kaffir scouts came and stated that the horses were poisoned by "Tulip grass," which no one then present appeared to recognise, or know of, and they asked permission to treat the horses then ill. They were allowed to treat six of the worst cases, four of which appeared, indeed, to be hopeless—one having its tongue hanging out of its mouth, and its lips cold and pendulous; but it ultimately recovered.

The Kaffirs collected some Tulip-plant and grass, charred them, made a kind of broth with the ashes, soot, and boiling water, stirring the whole while the water was boiling, and gave each horse about a pint and a half. Whether the remedy was efficacious or not, Mr. Lambert does not venture to say; but of the cases so treated four recovered and two died. On subsequent inquiry, Mr. Lambert learned that the poisoning and remedy are well known with regard to cattle, but that the accident is rare among colonial horses, as they refuse the Tulip grass. Mr. Gudgin corroborates the statement as to the remedy, as does also Mr. Longhurst, who remarks, "There are various antidotes used with complete success; but the base of the best is undoubtedly *carbon* administered in fluid—such as water, vinegar, or oil. The natives and colonists burn two handfuls of the 'Tulip' almost to ashes, and then throw it into a bucket of cold water and administer without delay. Soot, which is readily collected from any kraals, mixed with water, answers well, and relieves the tympany almost immediately. Burnt hay, straw, rushes, or a piece of old sacking answer equally well. Buttermilk, when it can be obtained, is also a capital antidote to Tulip-poisoning."

It is a curious fact that all the cases of poisoning from this plant in the expeditionary force, as shown by the returns sent to this country, occurred among *English horses*, none being reported among the *mules* or *colonial horses*. The resemblance of the symptoms and *post-mortem* appearances in people poisoned by *Homeria collina*, to those observed in the horses, must also be noted. In conclusion it may be added that during the first week of October, ninety-nine army oxen, and in September thirty Zulu cattle died from the effects of "Tulip."

With regard to Afghanistan, it appears that when the Kurum Valley was occupied by our Field Force in the autumn of 1878, one battery of artillery alone lost thirteen horses from eating poisonous grasses. Other cases occurred in 1879, particularly in the vicinity of the Peiwar Khotal, and at Thull. The grass is described by one observer, whose pony was affected by it, as "a coarse, bright-green, large-bladed grass that grows about in the hills." He had previously been shown a different wiry, olive-green coloured grass, said to be poisonous. The first symptoms noticed by this correspondent, were stiffness of the hind-legs of his pony, prostration, and dulness; laboured breathing, profuse perspiration; head depressed, eyes closed, spasmodic twitching of the lips, surface of body cold, pulse imperceptible, nausea, saliva green and flowing from the mouth, as well as a green discharge from the nostrils.

These progressive symptoms were followed by manifestations of abdominal pain. The tongue became much swollen, and protruded from the mouth. On the sixth day the end of the organ sloughed off. By giving stimulants, applying hot fomentations to the abdomen, and careful nursing this case recovered.

Dr. Aitchison, the botanist with the Kurum Field Force, was present at Thull when the Royal Artillery and other horses were poisoned. In a letter of his, which is now before me, he states that the symptoms were exactly those which would be produced by an excessive accumulation of gas in the intestines, from mechanical injury or some kind of food—the gas forming so quickly and abundantly as to interfere with the action of the heart and lungs, and lead to Asphyxia or rupture of the stomach or intestines.

Mr. F. F. Collins, Principal Veterinary Surgeon in Bengal, to whom I am indebted for the foregoing information, sent me a sample of grass from the Kurum Valley, where it appears to grow rather plentifully. Mr. Webb, Curator of the Edinburgh University Herbarium, who has most courteously rendered me great service in determining this and the Zululand plants, as well as afforded me valuable information, for which I thank him most heartily, pronounces the grass to be *Stipa Siberica* (the *Avena Siberica*

of Linnæus).* But Dr. Aitchison, who examined the grass in a comparatively fresh state, claims it to be a species of *Stipa* allied to *S. Siberica*, and states that he recognized its poisonous properties in Kashmir; that horses and cattle of the country know it and will not touch it; though those new to the country eat it with avidity, become drunk, and die comatose. The Kashmir plant grows under trees, and was in profusion at the Peiwar Khotal, and in the vicinity of villages in that locality. The natives call it Khékhá, and all know its poisonous properties. The remedy of the Afghans, as well as the Kashmiris and Central Asians, is acids—unripe fruit, for instance. Dr. Aitchison's remedy was holding the horse's head over a dense smoke until the animal perspired freely and a discharge flowed from the nostrils. He had treated very many horses in this manner in Gulmuz and all round about the Scinde Valley.† The plant does not grow in the open.

During winter, it appears the 8th Regiment collected it, as well as any other grass they could obtain; but it did no harm to the horses and ponies which ate it—possibly because it had lost its narcotic properties, as it dries and withers under the influence of the cold. In this respect the grass does not differ from many other poisonous plants, which are most dangerous during growth or the flowering period.

That some grasses have the power of producing a kind of

* As is known, Stipa is a genus of monocotyledonous plants belonging to the natural order Gramineæ—the species being grasses which grow in the temperate parts of the globe, and are very numerous. Linnæus, in his famous work, describes the *Stipa Siberica* as follows:—"*Avena paniculato, calycibus unifloris, seminibus hirsutis, aristis calyce triplo longioribus. Festuca glumis villosis, aristis calyce triplo longioribus.*"

† Dr. Aitchison, in a letter written in 1875, from Gulmuz, Kashmir, says:—"I have just been collecting some good specimens of a grass that is extremely common near Gulmuz. It grows in large tussocks, and is very poisonous to horses and cattle. The cattle are too knowing, and will not eat it. Horses from the plain do eat it, and die from its effects, but if quickly treated recover. They become comatose, and lose the power of their limbs. It grows in the Scinde Valley also. Whilst there, I heard of it and the cure, viz., smoking them, by making a large fire and keeping the horse's head in the smoke. The nose commences to run first, and if it does so freely, the beast is safe. The natives also say, if a cow eats it they give unripe apricots, or any acid vinegar, which aids the recovery. A large number of the horses this year at Gulmuz were poisoned by it: none died, as all smoked their horses."—*Journal of Botany*, vol. xv., p. 267.

stupor or intoxication in animals which consume them, there is ample evidence to show. I have mentioned the "Dronk grass" of the South African Boer, and Aitchison refers to the Indian *Stipa* met with in Kashmir and Afghanistan. In some American States there is a pale grass said to be capable of producing considerable excitement among horses, cattle and sheep which are fed on it; and a few years ago I published a paper in the *British and Foreign Medico-Chirurgical Review* on the intoxicating, or rather toxic action of our own *Lolium temulentum* (the "cockle" or "darnel" of agriculturists) when it is eaten by animals.

But perhaps of more importance and interest to us at present, is the fact that the *Stipa* mentioned by Aitchison grows profusely in Afghanistan, and indeed throughout a large extent, if not the whole of Central Asia; and this circumstance should put Army Veterinary Surgeons who may serve there on their guard, so as to prevent ill consequences.

It does not appear to have been known to Aitchison, that what appears to be this species of *Stipa* has been found in the interior of Mongolia, among the Ala Shan mountains. In *Trimen's Journal of Botany* (*new series*, vol. v., p. 210), Mr. Hance mentions having received from Dr. Bretschneider, physician to the Russian Legation at Peking, specimens of a grass which had been forwarded to the Count de Rochechouart, the French Minister at that capital, by a Roman Catholic missionary, accompanied by a note, of which I make the following translation:—"I send herewith a small parcel of a plant which the Chinese call *Tsoui tsao*—the intoxicating plant; the Mongols call it the poisonous plant (*herbe vénéneuse*). It is found in abundance on the Ala Shan mountains, where we were travelling; and our horses having probably eaten abundantly of the plant during the night, were so intoxicated that they could scarcely stand next morning. A Mongol family encamped near us advised us to give vinegar as an antidote; but as we had none we gave sour milk. They also told us that a sovereign remedy was a decoction of goat's head. This we gave to our horses, and they soon recovered. The droves of horses, cattle, sheep, and camels which graze on these mountains do not suffer,

either because they do not eat this grass, or they have become accustomed to the poison."

Hance observes that this grass belongs to an undescribed species of *Stipa*, only eleven species of which have been hitherto recorded as natives of the mountain plateaux or steppes of Central and North-eastern Asia. Six of these, he states, have plumose awns; of the remaining five, all but *Stipa Siberica* differ from the missionary's specimen in having the apices of the anther-cells glabrous or inappendiculate. This character, slight as it may appear, is, he believes, absolutely constant and invariable in each species. From *Stipa Siberica* the Mongolian grass is perfectly distinct by its inflorescence, smaller flowers, and other features. Hance designates it *Stipa inebrians*, and fully describes its botanical characters.*

The Russian traveller, Colonel Prejevalsky, in his "Mongolia, the Tangut Country, and Northern Thibet" (vol. ii., p. 81), alludes to this Ala Shan poisonous grass as a species of *Lolium*, and he mentions that the native horses and cattle carefully avoid eating it.

The most effectual remedy, simple and accessible, in the kind of poisoning we have been noticing—as, indeed, in several other kinds of poisoning—is undoubtedly charcoal, in the form of soot or burnt wood, and mixed with water for convenience in administration. But an important observation I may here be permitted to make. In the extreme or persistent tympanitis which often accompanies vegetable poisoning in herbivorous animals, grave damage may ensue from rupture of the stomach or intestines, owing to their great distention; or the diaphragm may

* The following is Hance's description, by which this dangerous grass may be recognised. STIPA INEBRIANS *sp. nov.* Rhizomate . . Culmis erectis cum vaginis nodisque lævibus, foliis linearibus acuminatis involutis scabris 8 poll. et ultra longis 2-3 lin. latis, ligula lineali truncata, paniculæ linearis coarctatæ angustæ 5-7 poll. longæ pallide viridis lucidæ radiis 2-3 mæqualibus 1-2 poll. longis adpressis a basi v. paulo supra ramosis et floriferis, pedicellis 1-2 lin. longis, glumis subæqualibus lanceolatis apice lacero-dentatis hyalinis nervis 3 viridibus abbreviatis, glumellis adpresse albo-villosis involutis superiore lineari herbacea paulo breviore uninervi inferiore lanceolata subcoriacea 1½ lin. longa trinervi fructifera atrofusca ex apice integro dense barbato aristam articulatam sed persistentum scabram sub anthesi rectiusculam postea distincte tortam et geniculatam 5 lin. longam exserente, antheris linearibus breviter barbatis.

become lacerated, or Asphyxia lead to rapid death, from the diminution of the cavity of the chest. In such circumstances relief must be afforded at once; and this, happily, can be achieved by the simple and safe surgical operation of puncturing the large intestine by means of a small-sized trocar and cannula, such as that made specially for this purpose by Messrs. Arnold and Sons, surgical instrument makers, West Smithfield. When the abdomen is enormously distended with gas, the danger of speedy death is imminent; but, fortunately, this distention facilitates the operation; so that it is scarcely possible to miss penetrating the colon.

"LOUPING ILL" IN SHEEP IN UPPER TEVIOTDALE.

BY W. ROBERTSON, F.R.C.V.S., KELSO.

HAVING for a considerable time paid more than a passing attention to that disease of stock popularly known by the term "Louping Ill," I am now at the present time—pending further investigation and experiments—desirous of placing on record certain ascertained facts in connection with the disease; as also of stating what may at least be called an opinion or hypothesis as to its nature and origin—although at present I am inclined to regard this as something more than a mere opinion—deduced from these facts.

After a faithful and exhaustive examination of the grasses composing the pastures on several farms in Upper Teviotdale, where the disease is prevalent, and comparing these with what exists on lands in the Cheviot range, where the disease is unknown, it is certain that the grasses in both situations are similar, but that in the former at a particular period of the year they are extensively *ergotised.*

The extent of this diseased or ergotised condition of the grasses seems to bear a direct relation to the amount and virulence of Louping Ill in these several farms.

Into the life-history of the fungus, "*Clanceps purpurea,*" of which this ergot is the intermediate or *selerotium* stage, I need not now or here enter, except to say that a knowledge of this life-history gives to my mind a wonderfully clear explanation of

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Hance observes that this grass belongs to an undescribed species of *Stipa*, only eleven species of which have been hitherto recorded as natives of the mountain plateaux or steppes of Central and North-eastern Asia. Six of these, he states, have plumose awns; of the remaining five, all but *Stipa Siberica* differ from the missionary's specimen in having the apices of the anther-cells glabrous or inappendiculate. This character, slight as it may appear, is, he believes, absolutely constant and invariable in each species. From *Stipa Siberica* the Mongolian grass is perfectly distinct by its inflorescence, smaller flowers, and other features. Hance designates it *Stipa inebrians*, and fully describes its botanical characters.*

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The most effectual remedy, simple and accessible, in the kind of poisoning we have been noticing—as, indeed, in several other kinds of poisoning—is undoubtedly charcoal, in the form of soot or burnt wood, and mixed with water for convenience in administration. But an important observation I may here be permitted to make. In the extreme or persistent tympanitis which often accompanies vegetable poisoning in herbivorous animals, grave damage may ensue from rupture of the stomach or intestines, owing to their great distention; or the diaphragm may

* The following is Hance's description, by which this dangerous grass may be recognised. STIPA INEBRIANS *sp. nov.* Rhizomate . . Culmis erectis cum vaginis nodisque lævibus, foliis linearibus acuminatis involutis scabris 8 poll. et ultra longis 2-3 lin. latis, ligula lineali truncata, paniculæ linearis coarctatæ angustæ 5-7 poll. longæ pallide viridis lucidæ radiis 2-3 mæqualibus 1-2 poll. longis adpressis a basi v. paulo supra ramosis et floriferis, pedicellis 1-2 lin. longis, glumis subæqualibus lanceolatis apice lacero-dentatis hyalinis nervis 3 viridibus abbreviatis, glumellis adpresse albo-villosis involutis superiore lineari herbacea paulo breviore uninervi inferiore lanceolata subcoriacea 1½ lin. longa trinervi fructifera atrofusca ex apice integro dense barbato aristam articulatam sed persistentum scabram sub anthesi rectiusculam postea distincte tortam et geniculatam 5 lin. longam exserente, antheris linearibus breviter barbatis.

become lacerated, or Asphyxia lead to rapid death, from the diminution of the cavity of the chest. In such circumstances relief must be afforded at once; and this, happily, can be achieved by the simple and safe surgical operation of puncturing the large intestine by means of a small-sized trocar and cannula, such as that made specially for this purpose by Messrs. Arnold and Sons, surgical instrument makers, West Smithfield. When the abdomen is enormously distended with gas, the danger of speedy death is imminent; but, fortunately, this distention facilitates the operation; so that it is scarcely possible to miss penetrating the colon.

"LOUPING ILL" IN SHEEP IN UPPER TEVIOTDALE.

BY W. ROBERTSON, F.R.C.V.S., KELSO.

HAVING for a considerable time paid more than a passing attention to that disease of stock popularly known by the term "Louping Ill," I am now at the present time—pending further investigation and experiments—desirous of placing on record certain ascertained facts in connection with the disease; as also of stating what may at least be called an opinion or hypothesis as to its nature and origin—although at present I am inclined to regard this as something more than a mere opinion—deduced from these facts.

After a faithful and exhaustive examination of the grasses composing the pastures on several farms in Upper Teviotdale, where the disease is prevalent, and comparing these with what exists on lands in the Cheviot range, where the disease is unknown, it is certain that the grasses in both situations are similar, but that in the former at a particular period of the year they are extensively *ergotised.*

The extent of this diseased or ergotised condition of the grasses seems to bear a direct relation to the amount and virulence of Louping Ill in these several farms.

Into the life-history of the fungus, "*Claviceps purpurea,*" of which this ergot is the intermediate or *sclerotium* stage, I need not now or here enter, except to say that a knowledge of this life-history gives to my mind a wonderfully clear explanation of

many phenomena exhibited in the history and development of Louping Ill.

The toxic and physiological actions of ergot on mammals, although capable of bearing somewhat different interpretations, are still sufficiently well understood to enable us to say that they appear to be developed in connection with a peculiar action on the cerebro-spinal nerve-centres, chiefly the latter—that their leading features or manifestations are paralytic or convulsive.

Placing these phenomena together, the known and recognised manifestations of the toxic action of ergot and the ordinary train of symptoms shown in cases of Louping Ill, it seems to me that the view which I suggest in regarding this disease as truly *Spasmodic or Convulsive Ergotism*, is capable of giving a fuller and more rational explanation of the diverse phenomena which characterise this disease, than any else with which I am at present acquainted.

It is intended that the question shall be followed out in this particular direction by a further examination of the grasses of other districts, both where the disease is known to exist and where it is absent; together with careful after-death examination of cases in the early stages of disease, with a view to detect either ergot or conidia, and by properly conducted feeding experiments—feeding, I mean, with the ergot obtained from the grasses.

I obtained my first specimens of the ergotised grasses from Mr. A. Brotherstone, of this town, who this season, at the request of the Hawick Farmers' Club, made an exhaustive botanical examination of the pastures of several farms in Upper Teviotdale. I will not trouble you further at this time, but rest satisfied that I have recorded these few facts relating to Louping Ill, together with my hypothesis of the cause or origin of the affection drawn from these facts.

You will most probably hear from me regarding this matter at another time.

SURGICAL AND PATHOLOGICAL NOTES.

BY J. WOODROFFE HILL, F.R.C.V.S., WOLVERHAMPTON.

Gastric Irritation, due to the presence of a Hair Ball (Dog).

ON the 2nd of July, 1878, a Blenheim spaniel, belonging to the Rev. Geo. Witherby, was brought to me for inspection. The servant could give me no particulars, beyond being told to bring it to me, as it was poorly. I found the animal suffering from what appeared to be Colic, but the pain was comparatively slight, as the symptoms only manifested themselves in a small degree now and then. I sent some chlorodyne mixture, and heard no more until the 4th, when I received the animal, dead, for examination. It appeared that the patient, having apparently recovered, was taken for a walk by his master, when he was seized with a fit and died. On opening the stomach, I found it contained a consolidated mass of human hair (combings), about the size of a bantam's egg. This fully accounted for the symptoms of stomach irritation and indigestion. The mass had evidently been there some time, as its firmness, shape, and coat of mucus testified, and it had probably been swallowed at different times.

Complete Rupture of the Jugular Vein (Cow).

On the 29th of August last, I visited a cow at Bloxwich, belonging to J. Bealey, Esq. She had caught the jugular vein on a gate-hook, severing the vessel. There was a large irregular wound at the inferior portion of the neck, on the right side, near to the thorax; hanging out of the orifice was some five or six inches of the lower end of the jugular vein, which, being plugged with a coagulum, presented much the same appearance as a piece of india-rubber gas-tubing. The superior portion, which was not visible but could easily be felt, was also plugged. A considerable amount of blood had been lost, the hæmorrhage being chiefly interstitial, and in the brisket, which had a heavy, dropsical appearance. A butcher was already there awaiting my verdict, Mr. Bealey fearing that bleeding might recommence, and death result. But from the plugged condition of the severed ends of the jugular I did not apprehend secondary hæmorrhage, and as there was only the necessity of administering restoratives

after such excessive depletion, with the removal of the accumulated blood in the brisket and judicious treatment of the wound, I very confidently undertook the management of the case. Of course, the function of the jugular on that side was destroyed, as it is when obliterated in other animals; but this in cattle is of little moment, particularly in feeding-stock.

I replaced the portion of the vessel hanging out, within the wound, ordered diffusible stimulants, and hot fomentations to the brisket. In a few days the wound smelt very offensive, from the breaking up of blood-clots. A stimulating liniment, with carbolic acid, was injected, which remedied this, and promoted a healthy discharge. The animal was quite well in a fortnight.

Cancer (Bitch).

On the 31st of September last, I visited, with Mr. F. Manby, F.R.C.S., the deerhound bitch "Teilda," belonging to James Forsythe, Esq., for the purpose of examining an enlargement of one of the posterior mammary glands, and which I pronounced to be cancer. The external appearance was glazed, tense, and of a varied livid hue. In several places it was puckered, and the nipple retracted. There were three fistulous wounds, from which a thin offensive discharge escaped.

I advised the removal of the tumour, and received her into the infirmary on the following day. She was duly prepared for the operation, which I performed on the 22nd of October, Mr. Elam, of Liverpool, being present, very kindly assisting me. Placing her under the influence of chloroform, an incision being made lengthwise to the left of the nipple, the substance was successfully dissected out, but it was of such a vascular nature that in those parts where there was no intervening areolar tissue the bleeding proved somewhat troublesome to us, hæmorrhage following every cut of the knife. Before final removal, the large vessels were embraced in one general ligature.

A smaller mass, the size of a filbert, mallet-shaped, and completely osseous, was found unattached underneath the cancer proper. The tumour involving the mammary gland, which it had almost obliterated, weighed a trifle over half-a-pound. On

making a section of it, the scirrhus type of cancer in both stages, *hard* and *soft*, was found to be well marked—the former in the centre, the latter towards its circumference.

A little tow, steeped in tinct. ferri, being placed in the cavity, the skin-wound was brought together by interrupted silk sutures. On the third day the tow was removed, and warm water bathings commenced. Appetite and spirits good and all the functions naturally performed.

The case continued to do well until the 1st of November when the patient refused her food, and on that day she had no movement of the bowels. An enema was given, and a dose of castor oil administered, but without the desired result. The following day she was in the same condition, and notwithstanding the repeated employment of enemas, sometimes with castor oil, and the administration of castor oil (in all six ounces), together with the absence of food beyond the forcible exhibition of a little milk, it was ten days before any evacuation of fæces took place, and then they were scarcely soft. During this period of constipation, although the wound was looking healthy and had nearly healed, symptoms of Peritonitis were manifested; the abdomen became tense and the skin covering it burning hot. On the seventh day, the slightest abdominal pressure with the fingers made the poor creature shrink with pain. These symptoms rapidly increased; she lay on her side, and her howls and short barks of pain were piteous in the extreme. Hot fomentations to the abdomen afforded great relief—indeed, such was her appreciation of the comfort it gave, that she would place herself in position for the cloths and lie perfectly quiet, with an expression of gratitude on her face the whole time. Chlorodyne was the only medicinal agent (excepting the castor oil) I administered, and milk the only diet. The acute symptoms subsided on the tenth day; on the twelfth she took a little biscuit voluntarily. From this time she gradually improved; a nutritious diet, with a daily allowance of port wine, sometimes varied with brandy and milk, materially hastening convalescence, and on the 22nd of November she went home in perfect health and spirits.

Early professional advice in cases of this description would spare animals much suffering, and materially simplify the treat-

ment. It has been my lot to operate frequently for disease of the mammary glands, which appears to predominate in greyhounds and spaniels; and though successful in each instance, I have been pained on many occasions—when large masses of diseased tissue have had to be removed—with thoughts of the prolonged suffering inflicted, by the owner not having sought remedial measures earlier.

INOCULATION FOR CONTAGIOUS PLEURO-PNEUMONIA.

BY JAMES MOORE, M.R.C.V.S., LONDON.

I HAVE read with great interest the leading article on this subject in the December number of the VETERINARY JOURNAL, confirming as it does, views which I was compelled to adopt after witnessing the beneficial effects of inoculation as a preventive of Contagious Pleuro-pneumonia in cattle.

It is certainly surprising that any one can "close his mind" to the protection afforded by inoculation, after the facts which have been adduced; but that such is the case is, unfortunately, only too well known.

Five years ago, as a member of the Sanitary Committee of the Vestry, I visited nearly all the cowsheds in the parish of St. Marylebone, and took the opportunity of inquiring as to inoculation. I found that it had been practised for many years, and the proprietors, without exception, assured me they could not carry on business without it. Recently a dairyman and cattle salesman, in a large way of business, told me he had practised inoculation for twenty-five years, and that the "trade" in London, with few exceptions, did so. These exceptions are men owning fifteen or twenty cows, who do not inoculate, *as a rule*, because it diminishes the secretion of milk for a time; but in case of an outbreak of the disease, they immediately inoculate the unaffected beasts. From this I fancy inoculation has been practised to a greater extent, and for a longer time, than many people suppose.

Two years ago, I saw about twenty Members of Parliament and several members of the Government on this subject, and was

rather surprised to find that many of them had never *even heard* of inoculation. However, at my suggestion, Sir Patrick O'Brien, M.P., inquired in the House of Commons whether the Government were disposed to introduce a bill making inoculation compulsory. He received a negative answer, on the ground that the Government veterinary advisers reported that sufficient evidence had not been furnished to show its efficacy or utility. I do not know who the Government veterinary advisers are, but it is quite clear they either know very little about the subject, or "pre-conceived ideas" have left no room for the reception of fresh knowledge.

Professor Brown, in a report published in the Journal of the Royal Agricultural Society for 1874, gives some interesting particulars of experiments conducted at the Royal Veterinary College, apparently with the view of inducing Pleuro-pneumonia by inoculation. That no lung-lesions are induced by it, I believe is freely admitted; although I have frequently noticed a short cough after the operation, but whether the result of it or not I cannot say. The report savours strongly of unbelief in inoculation as a means of checking this disease, and instances are given to prove its inertness; but they are not reliable, there being every reason to suppose that the animals were affected with the disease before and at the time of the operation.

The bad repute attaching to inoculation is altogether due to the improper ways in which the operation is so frequently performed. We cannot expect good results if the animal be suffering from disease of any kind, or by introducing the virus into a more important part of the body than the tail, or by inserting a piece of diseased lung under the skin, a mode common among stock-owners who inoculate without professional assistance.

My mode of proceeding is, to select a piece of diseased lung, free from any of the black discoloration, and filter the exudation through blotting-paper, into a half-ounce phial. I then clip the hair off the tail for two inches, and make an incision lengthways, of about three quarters of an inch, with an ordinary scalpel; then, with the tip of the finger, I rub a little of the fluid into the cut. This plan, I think, prevents swelling of the tail, in a great measure, as I seldom find more than a circumscribed enlargement of about

three inches, and have only to amputate about four per cent. Moreover, I think the cut must obviate pain when the tail first swells.

Most of, if not all, the experiments which have been undertaken with Contagious Pleuro-pneumonia, have been with a view of *producing* the disease; and a dogma has been promulgated to the effect that it can only spread by an animal inhaling the breath of an infected beast. It has even been said that "further investigation in this direction seems quite unnecessary." I, for one, cannot accept this dogma, and it should be received with great caution. I have known cases occur in different parts of a shed where this condition could not possibly occur. And not long ago, an instance came under my notice which I think worth relating. I was called to see a cow at a farm six miles from London, and astonished the owner by telling him what was wrong. He assured me he had not bought any fresh stock for over three years, neither had he heard of any cases of Pleuro-pneumonia in his neighbourhood for years. It seems, however, that a bull had been standing next to the cow, and that a carcase butcher, who did a large business about the district, came to buy the bull, and passed between him and the cow which subsequently became affected. Later on three more cows which stood near her became affected also; the remainder—about twenty-five—were then inoculated, and no more suffered.

No doubt the last three became affected through inhaling the breath of the first one, which is clearly the most favourable condition; but how did the first one take it, unless from the butcher's carrying the contagion?

In the report referred to, Professor Brown gives two methods for experimental inoculation; but as he says that legal and pecuniary difficulties lie in the way of conducting these investigations, I may relate a case bearing on the point.

In October of last year I examined a number of cows belonging to a dairy-farmer, near London. I found five affected with Pleuro-pneumonia, and the next day I inoculated the remainder —sixty-six altogether. About four months afterwards, the owner brought fifteen beasts from another farm belonging to him in the country, where the disease had never existed, and soon after their arrival they became affected. Not long after

that, he purchased a number of Irish cattle; these likewise became affected, and like the others, were dealt with according to the Act. During this time none of the inoculated cows became diseased, although they were allowed to mingle with the others; and up to two months ago, when I last saw the owner, they remained healthy, and no other conclusion can be arrived at than that the inoculation afforded the desired immunity.

I am reminded of an outbreak of Contagious Pleuro-pneumonia which occurred at Campbeltown, Argyleshire, in 1871, through the introduction of a prize beast from Edinburgh, and which was completely arrested by inoculation after the slaughtering process had entirely failed. I understand about 1,800 beasts were inoculated on this occasion.

I think inoculation may fairly be considered outside the field of experiment, after the tangible proofs which are recorded of its beneficial effects, and I am sure there are many members of our profession able to adduce instances of its utility, which, after all, are quite, if not more reliable than experimental investigations. And if the profession took the matter up—instead of leaving it for the doctors—say, by appointing committees of the medical societies to collect evidence, I think we could lay some information before the Government which they could not well ignore.

Can we imagine that the London cowkeepers—shrewd business men—would continue inoculating if they found no good results from it?

The Duke of Richmond and Gordon, in a recent speech, congratulates himself on the benefits conferred by the existing Contagious Diseases (Animals) Act, and instances the present diminution of Pleuro-pneumonia in this country; but he overlooks the fact that similar cessations have occurred before, followed by outbreaks of renewed energy. Besides, many cases are never reported, the victims dreading a loss of business consequent on publicity.

The existing system of slaughtering is a most costly one; its working expenses are great; and it inflicts a loss on the individual stockowner, besides casting a heavy burden on the ratepayers. Although it has had a fair trial, it has not yet "stamped

out" the disease, and never will. In fact, the remedy is as bad, if not worse than the malady.

I am fully persuaded that if inoculation, by properly qualified veterinary surgeons, of all bovines from four to six months of age, was rendered compulsory, we should soon hear the last of Pleuro-pneumonia.

I hope the editor of the VETERINARY JOURNAL will not lose sight of this matter; it is a great question, the solution of which will tend to enhance our profession, and show the utility of veterinary science to the general welfare.

GUNSHOT WOUNDS.—"THE VAGARIES OF A SNIDER BULLET."

BY J. C. DWYER, M.R.C.S., M.R.C.V.S., ROYAL HORSE ARTILLERY, WOOLWICH.

IT is not often that the veterinarian is called upon to deal with wounds resulting from guns and rifles. As a rule, our patients are not liable to injuries of this nature, unless indeed man has determined to take life, when the subjects of his humanity surrender themselves into his hands with so much misplaced confidence in his good nature that the result is seldom uncertain.

The surgical case recorded here resulted from one of those silly freaks with firearms which have, from time to time, cost many good lives. The victim in this instance happened to be a fine Newfoundland dog, the property of Lieutenant C——, R.N., and at the time of the accident was on board one of Her Majesty's ships, cruising off Vatè, in the South Sea Islands. The animal had always shown a great dread of musketry fire; so much so, that the sailors were in the habit of amusing themselves by presenting their empty rifles for the purpose of frightening him. On one of these occasions a blue-jacket took a carbine from the rack, and never suspecting it to be loaded, fired point blank at the dog then standing facing him. The carbine happened to contain a service round of ammunition, and the bullet struck the dog's head, entering the right side of the face, lacerating the muscles of the cheek, and making its escape at the angle of the jaw.

Taking a backward and downward direction, it re-entered the body at the breast, near the point of the right shoulder, and all attempts to trace its course from this spot failed. The animal lost a quantity of blood, and was thought to be mortally wounded. Contrary, however, to expectation, he exhibited no signs of internal injury, and under the care and attention of the ship's surgeon, the wounds healed rapidly, and the case did well.

In the meantime, the question as to what had become of the bullet afforded a subject for speculation amongst the crew. Travelling at a very high velocity, and with a force of impact equal to penetrating four inches of elm planking, it seemed incredible that it could have been arrested in its flight by the soft and superficial structures. Yet there remained direct evidence that the internal organs had so far escaped injury. This point was not cleared up, in spite of numerous and careful examinations, extending over seven or eight months, during which time the animal seemed to be in its usual health. The owner returned to England in the autumn, and he and the dog began to take long walks together. It then began to be noticed that the dog was gradually becoming lame on the left fore limb. In this condition the patient came for examination, and an abscess was found occupying the space between the scapula and ribs. It was only natural, in the absence of other causes, that this abscess was thought to be connected in some way with the gunshot injury; and such proved to be the case—for on introducing a probe, after the pus had escaped, the bullet was found, after a somewhat protracted search, firmly embedded at the upper part of the cavity, entangled in the connective tissue at the base of the scapula. These adhesions having been broken down, it was extracted without difficulty, and in a few days every trace of lameness had disappeared.

It is quite clear in this instance that the bullet had passed completely round the chest, from right to left, being bound down by the skin in the first part of its track, and coursed upwards, till it finally buried itself in the connective tissue between the scapula and ribs. In its passage it had lost all shape, being as much battered as if it had struck a target. Such wanderings were common enough in the days of "brown Bess," but were

thought to have ended when the rifle came into use. It is therefore satisfactory to find that, under certain conditions, the living body may offer successful resistance to the ingress of foreign substances bent on errands of destruction, even when propelled from weapons which men have taken centuries of time and millions of treasure in bringing to perfection.

AN OUTBREAK OF ANTHRAX FEVER.

BY W. SHIPLEY, M.R.C.V.S., GREAT YARMOUTH.

I HAVE at length found time to give a brief outline of some cases of Anthrax, as they occurred in my practice in 1878. I think them somewhat interesting, more especially as showing the susceptibility of animals of various species to become affected through being exposed to the diseased blood of other animals, and thus proving the contagiousness of the malady; also the necessity there is for the greatest care being exercised to prevent the spreading of these diseases; and, lastly, the great difficulty there is in accounting for outbreaks. I have not attempted to write a scientific paper on this subject, but simply to state the bare facts, which you are at liberty to do what you please with.

The animals among which the disease first made its appearance were some good Irish and shorthorn cattle, that had been tied up in a good shed, which has been used for the purpose for many years; it was well drained and ventilated. The cattle were fed on turnips, some of which were then on the land, other turnips were "haled" up and covered with sand, but they were perfectly sweet and clean. The hay was as good as could be had, and they had a fair supply of linseed-cake of the best quality. They had no water—the roots being fairly full of moisture, they required none. I carefully sought for the cause of the outbreak, but, as I think is generally the case, I failed in detecting the slightest thing that I could imagine would give rise to it. I however changed the diet to simply hay and water, and had the cattle carefully watched, after satisfying myself as to the exact nature of the disease, and, as the sequel will show, with apparently good results.

On March 15th a client of mine requested me to examine the carcase of a beast which, the day previous, had been found to all appearances dying, and which was supposed to have received some injury, and was immediately slaughtered; the butcher and himself not feeling satisfied as to the advisability of sending it to market for human food, my opinion was sought. I found it to be a well-fatted ox, quite fit for slaughter; it had been tied up in a good shed with several others for some months, and was not observed to have ailed anything until just prior to slaughter. The exact symptoms shown I was unable to learn. I observed numerous tarry-looking spots (ecchymoses) under the peritoneal lining of the abdomen, more especially near the region of the kidneys, and also under the *Pleura costalis*, and particularly so on that covering the borders of the ribs and the intercostal muscles. The meat was dark in colour, but the carcase was dry and showed no signs of putrefaction setting in—in fact, *rigor mortis* was well marked. The liver was dark and congested, and its structure friable and easily broken down; the spleen was rather larger than natural, and contained tarry-looking blood; the mucous lining of the intestines was more or less congested throughout the whole extent of the canal, and showed slight signs of inflammatory action in places. On examining the heart I found petechial spots about the endocardium.

From these appearances I formed the opinion that the animal had undoubtedly been the subject of Anthrax,—or Splenic Apoplexy, as, I think, it is wrongly called. I ordered the carcase to be destroyed, as being dangerous and unfit for food. On the 16th inst. another beast in the same shed was observed to be unwell; it was exhibiting rigors, was off its feed, and was very dull. The owner, without consulting me, at once sent him to the slaughter-house, a distance of three miles, where he arrived alive and was then slaughtered. On the 17th I examined the carcase, and could detect only slight evidences of the existence of disease, but still sufficient to convince me that the animal was the subject of this malady, and had it not been slaughtered, there is no doubt it would have succumbed. The only abnormal appearance was the enlarged spleen, dark coloured, and containing the tarry-looking blood, and the bowels tinged red; nothing

could be seen amiss with the carcase. I then paid a visit to the other cattle and thoroughly examined them. On taking the temperature of all, I detected one beast decidedly unwell. I ascertained it had not fed as usual, it looked dull, there was twitching (involuntary) of the muscles of the mouth and face, and the thermometer registered 107°. Being a good fat ox I deemed it advisable, under all the circumstances, to have him slaughtered; this was done at once.

My attention was now drawn to several pigs in the yard—more than twenty sows, and younger pigs of from three months to perhaps three years old. They were nearly all, without exception, off their feed, and were standing or lying together; many of them being the subject of severe rigors, ears and tails hanging pendulous, slight swelling about the parotid glands and throats; some had purple-looking patches about the ears and back of the head and sides of the neck.

On making inquiry I found that the manure and straw containing the blood of the first beast that was slaughtered, had been thrown into the yard, to which the pigs had access, and which they were known to have partaken of, clearly proving to me the cause and nature of the attack. I thereupon gave a very unfavourable opinion as to the result, so far as the life of many of these pigs was concerned. On the following day, March 18th, I visited the slaughter-house to see the carcase of the animal that had been sent by me for slaughter on the day previous, but failed in detecting any evidence of disease in it, except an enlarged spleen. I have no doubt that, had the animal not been slaughtered, it would have succumbed; the high temperature and everything pointed to that result. The butcher was unwise enough to give some of his own pigs some of the blood of the beast killed on the 16th, and now requested me to see them. I found them huddled together in the yard, shivering and looking most miserable; they had entirely lost their appetite and looked —although in good condition—very thin. I could see no discolouration of the skin or swelling about the glands. I may here note that this state of things proved to me that the animal of whose blood they partook undoubtedly had Anthrax in an early stage of development. The pigs after a few days recovered,

and went on grazing as well as before. When I arrived at my client's, the true nature of the malady was still more evident; for in the yard I found a valuable colt lying dead. The throat was enormously swollen about the parotid glands and nearly half-way down the neck. It was only observed to be unwell a short time before death. I found the animal had access to the yard where the blood had been deposited, and was known to have been there, and no doubt it had become inoculated with the virus. I ordered the colt to be buried intact in lime immediately. The remainder of the cattle were apparently healthy and showed no increase in temperature; no others had been observed amiss. The pigs were all worse; there was more swelling about the glands, and several had purple patches more developed. Two or three were evidently dying, and some had already died and were buried in lime. When the first beast, whose carcase I condemned as unfit for human food, was cut up (despite the caution I had given respecting the disposal of the meat) some had been brought home for the dogs. All these partook more or less of it and all were more or less ill. I found one—a strong kind of water spaniel—particularly unwell, with symptoms of extreme lassitude, very quick pulse and disturbed breathing, rigors, and visible mucous membranes very injected. It was lying about, and evidently suffering from the effects of the poisonous meat (for I can only call it so). The same symptoms were manifested by the other dogs, but to a less extent. A change of diet, small doses of laxative medicine, and stimulants soon put them all right again. The recovery of the pigs was not so rapid, although the fatality among them was not so great as I had prognosticated. They lingered on for some days, and several died; the others recovered slowly, the skin about the ears and neck sloughing in places. I much regret having been unable at the time to make more autopsies of these cases; but having on one occasion had reason to attribute a rather severe illness to making a *post-mortem* examination of a beast that had died from Splenic Apoplexy, I thought discretion the better part of valour, and desisted.

I treated the cattle with a gentle saline purgative, and gave some hyposulphite of soda. The yards and sheds were thoroughly

disinfected with chloride of lime. The animals also had a thorough change of diet, and no further cases occurred.

I may draw attention to the fact that the man who was in attendance on the cattle almost night and day during the outbreak, suffered from symptoms of blood-poisoning, the medical man in attendance giving it as his decided opinion he was suffering from the effects of the contagion. He was seriously unwell for several days, but eventually recovered.

I attribute the comparatively slight loss sustained in this outbreak to the promptitude in slaughtering the affected animals, and the free use of disinfectants; and I think the results go to prove that the longer an animal is affected the more contagious does the disease become, the poisonous properties of the blood increasing in virulency. I shall be glad to see a few remarks on this fatal malady from the able pen of the editor of the VETERINARY JOURNAL. I was particularly struck with the similarity in many of the symptoms in the sick pigs, to those affected with the peculiar and fatal "Swine Plague," as it is termed; the purple patches, the rigors, and the general appearance of the pigs would lead one almost to say at first sight that they were identical—in fact, I myself incline to the opinion that such is really and truly the case, although in an animal affected by *direct contact* with the *blood* of one of another kind the disease shows itself in a somewhat different manner—so far as the symptoms are concerned—from those animals that have taken the disease by contagion (as the term is commonly accepted) from one of their own kind; still, the general characters are so marked that I think we must consider "Swine Plague" as one of the anthracoid diseases.

EXTRAORDINARY CASE OF MELANOSIS.

BY A. BURNEY WREN, M.R.C.V.S., STIMBRIDGE, WORCESTERSHIRE.

I WAS called to examine a grey mare, ten years old, which had been in possession of the owner since she was five, and had always given him the greatest satisfaction as regards her working capabilities. The symptoms presented when I saw her upon the 31st of October, were those of great pain across the loins, and

constant twitching upwards of the hind limbs. I carefully examined her, and came to the conclusion that she was suffering from some deep-seated injury, and prescribed accordingly the ordinary mode of treatment, viz., dose of physic, fomentations and counter-irritants to loins and hind limbs.

I also found that around the anus, vagina, and mammary glands were several melanotic tumours, which her owner stated had been there for some considerable time. She gradually sank in spite of all attempts to alleviate her apparent sufferings, her pulsations from day to day became more irregular, and I advised the owner to have her destroyed. This advice, however, he did not act upon, but kept her alive until December 2nd, when she fell completely prostrate in the stall. She was then killed, and an autopsy was made which disclosed the following facts :—

The whole of the muscular tissues were invaded by small melanotic tumours, also the large and small intestines, the uterus and peritoneum. The liver was much atrophied, but the spleen was hypertrophied to an enormous extent, full of the black pigmentary material, and weighed twenty-six pounds. From the posterior aorta tumours were removed as large as a walnut.

Editorial.

TRICHINIASIS OR TRICHINOSIS IN ENGLAND.

How many deaths among people in this country have been due to the disturbance set up by the muscle-worm, derived from eating infested swine's flesh, will never be known, but there is great reason to fear that they must have been somewhat numerous. From the large number who habitually consume this flesh, the fact that they belong to the poorer classes, who cannot procure that of the best and therefore safest quality, and are least attentive to its being thoroughly cooked; and that the symptoms of Trichinosis are apt to be confounded with those of other diseases—notably Rheumatic and Typhoid Fever—it is evident that, given a quantity of worm-infested flesh offered for consumption, the risk of human infection is great, and its detection a matter of mere chance. To what extent the disease may prevail among people we know not, neither have we any means of ascertaining whether and to what degree swine in this country have these unpleasant entozoa in their flesh. There is no evidence that they have ever been looked for in the tissues of our native pigs—indeed, with that supreme indifference for the public health which characterises our unpaternal Government, no

inquiry has been instituted in this direction, neither has the flesh of imported live or dead pigs been scrutinised in order to find out how much of it is dangerous as food.

That our native pigs harbour trichinæ, there is every cause for believing; and that human beings in this country have died—if not from Trichinosis, at least with these pests in myriads in their bodies, is not to be denied. The worm was first accidentally discovered in the muscles of the body of a man which was being dissected in a dissecting-room in London, nearly fifty years ago; and since that time it has been found in dissecting-room subjects at various times, in these kingdoms—though whether the patients had succumbed to Trichinosis we cannot learn.

Years ago we drew attention to the danger people incurred through eating trichinous flesh, and we have continually insisted upon the Government doing something to protect the public health. We were the first to point out—in the *Times*, *Lancet* and elsewhere—the well-established fact that a large percentage of American pigs harboured muscle-worms, and we urged that pork inspection should be adopted as a sanitary precaution. But nothing has been done, except to tell people that all pork should be thoroughly cooked; though thorough cooking is not always possible in the best-regulated kitchens, seldom so among the poorer classes, who most largely consume this flesh.

Under the conditions mentioned, it need not be a matter for surprise that an ascertained and authenticated outbreak of Trichinosis has at length been recorded; the only thing for astonishment is, that such outbreaks were not reported long ago and frequently. This outbreak took place on board a training or reformatory ship for boys, and by what must be considered a mere chance, the malady was traced to its source. The disease was at first believed to be Typhoid Fever, a large number of boys being attacked, and they exhibited symptoms not unlike those of that malady.

There was, however, no apparent reason for the sudden appearance of the malady in question, and almost in despair of being able to trace and remove the cause, the department applied to the Local Government Board for the services of one of the medical inspectors on the staff of that office. The gentleman selected made a careful study of the conditions of life on board the ship affected, and eventually came to the conclusion not only that the cases with which he had to deal were not instances of Typhoid Fever, but that they were traceable to something in the diet of the boys. By-and-by a death occurred, and the medical inspector having consulted with his colleagues at the Local Government Board, and communicated his suspicions to them, the Home Office was induced to give authority, with the consent of the relatives, for the body to be exhumed, and for an examination to take place. The cause of death was then apparent, in the number of trichinæ which filled some of the muscles. The boys on board the ship were fed, it appears, on stated days, on American pork, and it is believed that to trichinæ, taken into the stomach in this food, and which must have retained their vitality in spite of prolonged boiling, were due both the death which occurred and

the other cases of illness which presented so many symptoms of a typhoid character.

Had this outbreak occurred in a family in one of our poverty-stricken localities, a government medical inspector might never have heard of it, and the ordinary medical attendant would, in all probability, have ascribed it to Typhoid or some other fatal malady of frequent occurrence. Surely the public have some claim for consideration in a matter of this importance! Are they not fully justified in asking for some better kind of protection than that contained in the cheap and ineffective advice to cook their pork thoroughly? Cooking their American pork did not protect the boys of the reformatory ship from Trichinosis, and the worthlessness of the advice is one more instance of the imperfect knowledge which has been so often displayed in our dealings with this and other dangerous diseases of animals. But then it is much easier to advise than to act.

THE RECENT PUSTULAR EPIZOOTY AMONG HORSES.

In the VETERINARY JOURNAL for February, 1879 (p. 76), Mr. Daniel, M.R.C.V.S., published an article on a pustular exanthematous disease which had been prevalent for some time among horses in various parts of England, and the more salient characters of which had been previously discussed on several occasions at the Central Veterinary Medical Society. From the annual report on the contagious diseases of animals in Brabant for 1878, we learn that the malady was observed in several horse-dealers' stables in Brussels during the third quarter of that year. In Mans, a veterinary surgeon who treated many cases, states that they were principally English-bred horses. "This disease was characterised by the presence of very numerous pustules on the region of the back and croup. These pustules appeared as rounded prominences, due to the elevation of the epidermis, which formed, with the hair, a thick brownish crust. After the elimination of this crust, there remained a deep abscess, filled with yellowish pus. The exanthem was so contagious, that it only required putting on a healthy horse the harness worn by a diseased one to produce the disease in a very short time. I have seen it transmitted even after the harness has been washed. Actual contact only could transmit the affection; I have never known it to be conveyed by a volatile virus.

"For treatment, I have recommended cleanliness and the application of dilute carbolic acid. I cannot say that I have been successful in combating this trifling disease, for its duration, notwithstanding the most careful management, was always long, and the ulcers very slowly cicatrised. There can be no doubt that the malady was introduced into Belgium by English horses."

NOTES MADE DURING VISITS TO THE REMOUNT DEPOT, SAHARUNPORE, NORTH-WEST PROVINCES, INDIA.

BY C. STEEL, F.R.C.V.S., 16TH LANCERS, ON SPECIAL SERVICE DURING THE AFGHAN EXPEDITION.

(Continued from page 34.)

DESCRIPTION OF PREMISES AT STUDS OR DEPOTS.—We will take Saharunpore as the best and most extensive establishment. There are stables with paddocks, and a farm is attached. The stables consist of six ranges of arched sheds about 200 feet long and 25 feet high, composed of mud bricks

with tile roofs; a wall about three feet high runs down the centre, surmounted by open brickwork to a sufficient height for guarding against injuries. There are no partitions or stalls, and the mangers consist of earthen pans supported by platforms composed of mud. The horses stand head to head, and there is a hole under each manger for the circulation of air; to the rear of the horses is sufficient space for the attendants to walk in safety, and without the wall is a verandah also arched; the flooring is of blueish clay, which forms a material, when dry, partially impervious; but it is occasionally found necessary to have this removed and replaced. The strictest cleanliness is enforced, and in consequence the perfection of purity appears to have been secured. Ventilation receives, of course, great consideration in the construction of these stables; and to secure the full benefit of welcome breezes in hot weather, the situation of the building is of great importance, but the architect appears to have overlooked this during the construction of five of them, only one securing the best aspect by being built with its gable ends north and south. The reason for this situation being preferable is, that during hot weather the prevailing breezes are east and west, and it is obvious that in a building two hundred yards long the benefit of these breezes must be curtailed when the sides are not exposed to those points.

The roofs are raised at the eaves, the arches are always open, and altogether the effect produced is satisfactory. Wells and drinking-troughs are placed at the end of each stable; dung is immediately conveyed to pits on the farm situated at some distance; there is, unfortunately, no provision for urine, but the syces are constantly on the watch with cans to catch that fluid when being voided, and this, although contributing to cleanliness, is a system not without its objections. The Hospital Stable is also a lengthened shed built of kiln bricks; it has a semi-arched roof of solid masonry, with ventilating shaft; consists entirely of loose boxes with open brickwork walls; there are verandahs as in the ordinary stables, and "ghamps" are provided—lying in a slanting direction against its porches. These "ghamps" consist of double hurdles, between which straw is placed and into the space of which bands are woven, cord being added for additional security; they act as guards to prevent the ingress of cold winds, and the degree of exclusion can be regulated by the position in which they are placed. There seems to be a difference of opinion as to their further utility, but Mr. Kettlewell, the veterinary surgeon in charge, assures me that they also prevent the too rapid ingress of hot air, the difference in temperature between the outside and inside of the stable when they are used being from 30° to 40° in hot months; and that in stables where they are not used the temperature in the after part of the day is hotter inside than outside. It must certainly be said in favour of Mr. Kettlewell's theory, that these means exactly correspond with those adopted for keeping bungalows cool in India; and it is a pity that prejudice should prevent such an easily ascertained point being at once settled and acted upon. If the temperature can thus be reduced for the comfort and benefit of 50 horses in hospital, why not allow the 1,000 horses in the ordinary stables to share the luxury, and so prevent, in all probability, many of them from becoming candidates for admission to hospital?

The paddocks consist of enclosures of about fifty acres in extent; they are not irrigated, although the Jumna Canal supplies all the neighbourhood with water. They are fenced with wooden rails, which, I am given to understand, are a great source of expense in consequence of the frequent repair necessary as the result of the ravages of white ants. In one part is a plan of division apparently much preferable to the rails, viz., mud banks, similar to those so common in Ireland, surmounted by the prickly aloe plant. These are very effectual in preventing the escape of fresh horses from their pasture,

and although requiring frequent repairs, especially during the rains, must be much more economical. The grass in these paddocks is fairly good, being principally "dup" (*Cynodon dactylon*), and "serwana," or "serrevalla" (*Andropogon*). I could not help thinking that the style of stable which has been described might be adopted with advantage in England, but I am informed that they are considered insufficient protection in cold weather; they appeared to me to be sweet, well-ventilated, clean, and all that could be desired. The farm is about 1,500 acres in extent, and is cultivated for supply of food for the horses; chiefly oats are grown, but there is also a millet called "impey," of which I have a specimen. Carrots and lucern are here also produced. Two hundred bullocks are kept for the cultivation of this farm; the grass upon it is inferior to that in the paddocks, and I was sorry to observe that it was much impregnated with sedge. The land appeared to me to be of the fen kind, and altogetder did not indicate skilful agriculture.

METHOD OF FEEDING, EXERCISE, ETC.—The materials employed for feeding are split gram, ground barley, bran, oats, grass called "dup," "impey" (a millet), "sutto," and linseed. The coarse sedge and reed-grass is used for litter. The ordinary feed for healthy horses in cold weather is five seers (ten pounds) of grain, and bran in the proportion of two seers of gram, two of barley, and one of bran. Younger horses have gram two seers, one and a half of barley, and half a seer of bran; the gram in both instances is soaked. "Walers," on first arrival, are supposed to be favoured, so as to make them presentable, and for this purpose extra "sutto" and linseed are given. In hospital, as a rule, no barley is given, and only two seers of gram and one of bran. Oats without straw are sometimes used as a change of food; but, of course, the diet is left to the discretion of the veterinary surgeon, who can have any article he requires on requisition. In addition to the above-mentioned allowance of gram, etc., "jup" grass is given, the cost of which is a rupee for six maunds in cold weather, and for eight maunds during the rains; four to six pounds of oats in straw, and "impey" (only a rain crop) as green chaff, containing nutritious seeds and saccharine matter.

It will thus be seen that the feeding is decidedly high for horses entirely unworked, and at times without exercise for days together, in consequence of unfavourable weather. The times of feeding are at nine a.m. and five p.m.; the animals are watered three times a day, and always before feeding; in hot weather water is given more frequently, access at all times being free to the water-troughs. The water at Saharunpore is relished, but there is a little excess of lime in it, to which new comers have to become accustomed; and a source of impurity which has to be strictly guarded against is the habit the syces have of bathing in the troughs when not watched. The sole exercise given the depôt horses is that voluntarily taken when turned out in the paddocks, and by the "liberty system" ordered by the stud commission they are supposed to spend the greater portion of the twenty-four hours in freedom. This, however, is practically sadly curtailed; for in hot weather they are only allowed to be out from sunset to sunrise; and when it rains, they are entirely confined to the stable, where they are tied up by the halter, thus injuriously keeping them in a constrained position, which is especially detrimental to the development of the younger animals. It would appear that, in a place so well stocked with beautiful trees as Saharunpore, sufficient shelter would be found, and the hours of confinement to the stable might be beneficially abbreviated.

With the *grooming* I was disappointed. Instead of the wisp, and that invigorating process resorted to in India termed the "mull" (a kind of shampooing performed by the dexterous application of friction by means of the syce's arms), I observed the brush and curry-comb to be almost solely used, a duster very occasionally being also applied.

Considering the large number of horses here kept for a considerable time, it appeared to me a pity that they should be subjected to no training whatever. Surely some preparation might be made for adapting them to their future duty, thereby preventing the bad habits which too often result from idleness, in horses as well as in human beings ; ensuring a certain amount of wholesome exercise, which would assist in the development of the young, and rendering them more speedily available for duty on joining the corps to which they are subsequently drafted. Mr. Kettlewell, V.S., obligingly showed me interesting records of the health of horses, both during the stud and depot systems. Of course, we must be prepared to find the percentage of deaths much greater during the breeding-time, in consequence of the dangers of parturition, infantile ailments, and castration ; but twenty-five per cent. appears rather a large mortality ; yet such was the average. Thanks to stable management, and the comparative absence of juveniles, the death-rate had been reduced at this reserved remount depot to 3·20 per cent. in the year 76-77 ; 2·2 in 77-78 ; 2·36 in 78-79. The diseases most prevalent are skin affections, such as Urticaria, Prurigo, etc. ; Indigestion and Colic (indicating error in feeding, which might be avoided by permitting veterinary supervision) ; Pneumonia and Catarrh, which, it is well-known, ought to be exceptional cases ; Eczema, and Strangles. Nervous diseases are rare ; liver disorders, which may clearly be traced to too high feeding and want of exercise, are frequent, and a most debilitating form of bilious fever sometimes occurs as an epizoötic. Much damage is done by immature breeding, the result of allowing colts and fillies to run together at grass. Out of 800 horses at Saharunpore, I saw twenty foals at foot, twenty that were weaned, and there were ten more mares to foal. These, in the majority of instances, were useless produce, and the dams were irreparably injured. I must remark, however, that six or seven foals were from "Waler" mares who had joined *enciente*. Wounds amongst so large a number of fresh, highly-fed horses accustomed to run out together, must, of course, be expected ; hock-lameness is very prevalent.

Description of Horses at Saharunpore at Present Time.—In all the number of horses is 733, viz., Walers, 356 ; Arabs and Persians, 33 ; Stud-bred (passed for service), 73 ; Stud-bred, two and three years old (not passed), 106 Country-bred, 165 ; total, 733.

No. 1 stable I found occupied by Walers only, which had been selected for horse and field artillery, medium cavalry, and chargers. These horses are known by brands, usually the initial of the breeder, and generally situated on the shoulder. Celebrated brands are sometimes forged, in order to increase the value of the animals ; but such forgeries are easily detected by the initiated, and this is more frequently practised with the E C brand than any other. There were seventy-five horses on either side. I had several brought out for my inspection, and found them generally of very suitable size and substance for military purposes ; but a great variety of blood was evident, and some were decidedly coarse. Most exhibited freedom of action, with the exception of their hock joints, in which they seemed to be generally deficient ; and in many cases there were legitimate spavins, causing absolute lameness. Exostoses of all kinds appear common in "Walers" ; "calf knees" are also a frequent imperfection. Grey horses are strictly prohibited. It is remarkable that although "Walers" are often techy when their fore-quarters are handled or even approached, they seldom show any disposition to kick when a person is passing behind them. Certain peculiarities were pointed out to me as indicating special families, one breed being particularized by a broken appearance of tail, said to resemble that of the scorpion. "Scorpions" are non-enduring horses.

No. 2 stable also contained "Walers."

No. 3 stable. Stud-breds and "Walers," also a few boxes at the end for invalids. This is the depôt for horses returned from regiments for a time, in order that they may have a change of air, rest, and treatment, such as in cases of obstinate unthriftiness, etc., is requisite. Those horses coming from the Karuntadhee stud are marked on the off side with A K; those from the Home stud (Kurnaul) are marked L on the near side, the letter originating from Lord Lawrence, who established it; some from the Central stud could be picked out by their peculiarly turned-in elbows and hollow backs, imperfections said to be the result of climate and restriction when young. Here were some "Walers" from Madras, some of a lot of eighty which joined last cold weather, and whose age, I understand, averaged fifteen years; a few from the Buxar stud, marked B, were remarkable for their size and strength; the Hapur horses are marked H. Of all the stud-breds, the palm must certainly be given to those of the Home stud; they are level horses, all show freedom of action, and exhibit breeding.

No. 4 stable contained stud and country-breds. Those country-breds that come from Central India are marked on the neck; they are small, but appear sound, and have the credit of possessing good constitutions. It is earnestly to be hoped that Mr. Hallen's efforts will result in considerable improvement in country-breds from the Punjab. The present specimens are anything but satisfactory; they are deficient in size, possess sickle hocks and bad forelegs, and in those from every other district, except Central India, there are much the same objections, deficiency and unsoundness of hocks being most conspicuous.

No. 5 stable, country-breds.

No. 6 stable, country-breds.

Committees assemble twice a year at Saharunpore, in the months of October and April, attended by the circle veterinary surgeon (inspecting veterinary surgeon). The director of army remount operations is generally the president, the members consist of an officer of Cavalry, one of Artillery, and one of Hussars. This committee is for the purpose of rejecting those horses that are unfit, and classing those that pass; the amount of rejections of those sent up from Calcutta and Bombay, I was informed, was formerly two per cent., but now reaches six per cent. This is a very serious difference to account for. With regard to the classing, I was much struck by the number of Hussars and Cavalry horses which remain at the depôt for a long period, in consequence of the supply exceeding the demand; whereas Artillery horses are drafted without loss of time. Could not the purchasers be informed as to the class of horse required, and the numbers of each class in stock, so as to save the expenditure of twenty-five rupees a month in keeping each of these supernumaries? The horses at the depôt are solely for the supply of European regiments; native regiments have a "chunda" (or fund), from which they purchase remounts, the average price not to exceed two hundred rupees each; every trooper buys his own horse, paying for it by instalments. When the stud existed, the rejections and young stock not purchased by Government furnished an ample supply for the wants of these nineteen regiments; but of late they cannot possibly obtain horses even at two hundred and fifty rupees, many regiments having an extra number of dismounted men. The 7th Bengal Cavalry had to go to Calcutta to buy "Walers." The Cape horses were considered the best troopers, but that supply has failed. Persians and Arabs are now rare; in Madras, "Walers" are beginning to predominate, although there are more Persians and Arabs than in Northern India.

In reviewing the success of studs, the recent history of the country has to be taken into consideration. It is believed that, although not absolutely paying, they were, as before stated, doing good service indirectly previous to the

Mutiny; for any number of horses were then obtainable. In that great struggle, however, which shook our rule to the very foundation, the interests of horse-flesh did not escape considerable damage. Horses were stolen and destroyed, many starved for want of supplies, and breeding was put a stop to. Since that time two famines have contributed to counteract any fresh effort at increasing the supply, and the influx of "Walers" has had a depressing effect on the prices of country-breds in the markets, still further, of course, discouraging production. Enough has been mentioned in this paper to prove that the reserved depôts are expensively conducted, and it must be evident that, according to the present system, "Walers" do not pay. With the paucity of country-breds, Persians and Arabs quite as dear as "Walers," only about one hundred and fifty stud-breds left of the thousands that were bred, it is evident that considerable difficulty must be experienced in properly mounting our Indian troops, especially in the case of an unusual demand—a circumstance seen to be quite possible when we consider our critical political position at the present time. In the event of this demand, money would meet it, we are told, at a very short notice by securing supplies from Australia; but what could be done if that source became unavailable in consequence of our communication with that country being cut off? Mr. Hallen's scheme really would appear the only promising one now in existence for restoring such an internal supply as is required, and it is to be hoped that Government will not be backward in encouraging a movement of such vital importance. It may be that some revision of his plan is necessary, for there are many who say it does not at present promise success. It is evident that a larger staff must be essential to its well-being, that of course would involve a pecuniary outlay; but if horses could again be produced in the country of sufficient size and quality, we should be independent of the foreign supply now depreciating the value of what little native produce remains, and is being slowly stimulated by the "horse-breeding operations," so that abundant return would result in the restoration of this particular species of imperial wealth, strength, and independence.

THE CAMEL.

(*From "The Asian."*)

THE camel has recently been a good deal before the public in connection with the Afghan wars, and the knowledge one gleans from books of its character and performances are so different to late experiences, that we think a short record of what has become known of the beast may prove of interest. In many respects the camel's powers have been greatly over-rated, and in some respects much under-rated. We have never seen it mentioned that he is a good beast in a stony, mountainous country, and yet a correspondent tells us that he was out the other day with some hill camels, loaded with about two *maunds* each, marching over the hills and rocks of a range at an altitude of 4,000 to 5,000 feet. In many places there was scarcely even a path, but these camels went over the ground with more ease than dismounted horses, and climbed ascents and descents over which no one cared to ride unshod Beluchi mares, and which it was thought no camel could possibly surmount.

Books on natural history have led us to believe from earliest childhood that the camel was a quiet, patient beast, capable of carrying any load, except that last straw; and of going any distance with scanty food, and no

water except what he carried in his false stomach. Can any one, who has ever been in camp with camels, imagine that the beast is either quiet or patient? How well one knows, on going to bed after giving orders for the night march, that the next two hours will be rendered hideous by the gurgling groans of the camels as they are being laden—groans that until one has had a little experience cause one to imagine that the creature must be undergoing some diabolical torture: then, when his load is complete, and ropes are being laced up, he makes his final struggle, so frequently successful in freeing his tied-up foreleg and upsetting the load, merely, as the beast must or should know, in order that the whole process may be repeated. Even the well-bred *sowari* camel cannot refrain from these hideous groans and gurglings as one mounts him, and he certainly has his revenge by pouring forth into one's face the most sickening odours of semi-digested vegetation.

The camel, moreover, is very stupid, and intensely obstinate. A short time ago, when crossing the Chenab, one of a lot of camels refused to get into the boat, and sat down on the bank with his head over the bulwarks. After a great deal of struggling, one of his forelegs was seized and hoisted over into the boat, then the other foreleg; but still he objected to get in, so a bamboo was placed under him, and he was toppled over into the boat, where he lay on his side groaning and gurgling hideously during the crossing; and on the other side of the river he had to be got out in much the same manner as he was put in.

There appear to be but three races of camels in India. Firstly, the *sowari* or riding camel, a handsome beast with his clear limbs, thin skin, shapely neck, small head, and bright eye, as different to the ordinary camel as the race-horse is to the cart-horse. Secondly, the load-carrying camel of the plains, about as gawky and ugly an animal, after he has passed the age of infancy, as one can set eyes on. Thirdly, the hill camel, also a load-carrier, bred chiefly in Afghanistan, and seen in India only in the cold weather in the *kafilas* of the Kabulees who come down with wool, grapes, and dried fruits. He is a better-looking animal than the camel of the plains, and can be distinguished at once by his shorter legs and the quantity of hair about him, more especially on the forearm.

Riding camels have great powers assigned to them. We believe that in the Bikanir country these camels do occasionally get over 200 miles in thirty-six to forty-eight hours; but they only do this rarely, and are fed up for the purpose on *goor* and alum for weeks beforehand—any good horse, properly trained, would do as much. In fact, the natives in camel countries, such as Rajpootana, say that if you want to go fast, take a horse; if comfortably—*i.e.*, carrying some traps—take a camel.

A gentleman once started with three *sowari* camels, travelling hither and thither through a portion of the Bikanir and Western Rajpootana, and thence through Neemuch to Angur. The trip lasted from the middle of April till about the end of May, and he travelled from twenty-five to thirty miles a day, halting only in Ajmere and Neemuch. One of the three camels carried himself, the second carried his servant, the third some cooking pots and a small tent—each camel also carried its owner. Although these camels were fair specimens of their class, and the country was well suited to them, they seldom averaged more than four miles an hour for the whole march. They could trot six or seven miles an hour on the level, but any ascent or descent, even over the sandy ridges of the Bikanir, at once brought them down to a walk. Neither did they stand the work well, although occasionally cooked up with *goor* and alum; they became weak and footsore, and during the six weeks the whole lot had to be changed twice, so that each camel proved equal only to a fortnight of such work.

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In the recent campaign in Southern Afghanistan, camels proved but sorry beasts of burden. Their regulation load was only four *maunds*, but we doubt whether they carried three *maunds* on an average, and they died in such numbers that the transport was only kept going by a constant supply of fresh animals.

The camels were certainly not well treated in the early part of the campaign. The popular notion that a camel could pick up a living anywhere, more specially in such a camel country as Afghanistan, was tried practically, and found to fail. The fact is, that the Afghans themselves take nearly all their camels down to the plains in the winter. Between Quetta and Kandahar not a green leaf is to be seen in January; the valleys appear as deserts covered with little dry bushes of wild sage, which was the only food a camel could possibly find; and though the hill camel can manage to obtain a few pickings from these, it was not so with the plains camel. Later on in the campaign, the camels got regular rations, two *seers* of corn and four *seers* of *bhoosa* daily, the latter being, so far as could be judged, about as much of that material as a camel cared to eat. But even with his rations the camel was a poor beast, and could not compare with the mules which, carrying two-thirds as much as the camels, were prepared at small provocation to buck their loads off, and were seldom at a loss for something to eat. Sometimes they would gnaw their ropes, sometimes their blankets, and they appear to make quite a hearty meal off the soil of the camping-grounds, trodden as it was into a mixture of earth, *bhoosa*, and dung, flavoured with a *soupçon* of dead camel. Towards the close of the campaign a large proportion of hill camels had been obtained, which were of course much better suited for the country and the bitter climate of Afghanistan than the camel of the plains; but the constant work, combined with the want of proper grazing, told severely even on them. When passing through Mooltan, in June, there might be seen many of these hill camels there, evidently suffering as much from the heat as their cousins of the plains had suffered from the Afghan winter.

It would surely repay Government to appoint a few veterinary surgeons to study the anatomy and pathology of the camel. At present our knowledge is rather like that of the vet. in Afghanistan, who on being asked by the General whether he could not do something for the camels, which were dying by twenties, replied that no man could do anything for a beast that had three stomachs; and went on to add that, although you might know what the camel had eaten to-day, yesterday, and the day before, yet you could not tell which of the three meals was now disagreeing with him, or which particular stomach it was in; and moreover, if you gave the beast medicine, the odds were three to one against it going into the right stomach.

A good deal of the mortality amongst the camels in Afghanistan was due to Lung Disease, and in climates where snow is encountered, the camel requires a covering for his neck as well as for his body.

It would be interesting if some of our readers would give their experiences of camels—for instance, the fastest rate at which a *sowari* camel can trot for an hour, and the distances they can travel in twenty-four or forty-eight hours; the weight that plain and hill camels can be made to carry for days consecutively; the best food for them, etc., remembering that hearsay evidence is of little value in such matters.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY AND SPECIAL MEETINGS OF THE COUNCIL, HELD JANUARY 14TH, 1880.

THE PRESIDENT in the chair. The SECRETARY intimated that the President had presented to the Library of the College two volumes of his work, "On the Principles and Practice of Veterinary Medicine and Veterinary Surgery."

On the motion of Mr. DRAY, seconded by Mr. FLEMING, a vote of thanks was passed to the President for his presentation.

Professor WALLEY also presented to the Library his work, "On the Four Bovine Scourges."

Mr. DRAY proposed, and Mr. FLEMING seconded, a vote of thanks to Professor Walley, which was unanimously agreed to.

Correspondence.

Letters were received from Professor McCall and Mr. Cuthbert, of Leeds, regretting their inability to attend the meeting.

A letter was read from Mr. Hunt, junr., stating that his father, in consequence of a paralytic stroke, would never again be able to attend the examinations in London, and conveying to the Council his father's thanks for their sympathy and kindness.

The PRESIDENT regretted the cause of Mr. Hunt's resignation, but said there was nothing left but to accept it.

Mr. DRAY moved that the resignation be accepted.

Mr. P. TAYLOR seconded the motion, which was carried.

Mr. FLEMING hoped that the Council, in intimating their decision to Mr. Hunt, would feel itself in duty bound to express their great sympathy with him in his affliction, and to thank him for the various services he had rendered both to the Council and the profession; also to express the hope that he would be restored to health, and enabled to serve them as heretofore. He would make a motion to that effect.

Professor WALLEY seconded the motion.

Professor SIMONDS fully endorsed the sentiments of Mr. Fleming. Mr. Hunt had for many years acted conjointly with himself as Inspector to the Royal Agricultural Society at its annual shows, and he could say, from long experience, that a more efficient officer could not be found. He was desirous of recording, not only his sympathy with Mr. Hunt, but also his thanks for the valuable services he had rendered, not only to the Council, but also to the profession, by holding important and responsible offices.

The PRESIDENT said he could endorse what had been said by Professor Simonds. He had known Mr. Hunt for many years as an Examiner, and had observed the kindness and urbanity he had always extended to the students. He had already expressed his sympathy to Mr. Parker (from whom he had received a letter in reference to Mr. Hunt), and how, individually, he felt his resignation; and he had thanked Mr. Hunt, in the name of the Council, for his services.

Election of Examiner.

On the motion of the SECRETARY, seconded by Mr. DRAY, Mr. John Roalfe Cox was elected Examiner, in room of Mr. Hunt, it being understood that the term of office was for five years.

The ballot having been taken, Mr. Cox was declared unanimously elected.

Resignation of the Secretary.

The PRESIDENT read a letter from the Secretary, tendering his resignation.

Mr. DRAY, as a very old friend of Mr. Coates's, and as one of the members who voted for his election, said he had endeavoured to prevail upon him to remain in office. He had been a most faithful and energetic servant to the Council, and, while regretting the cause of Mr. Coates's resignation, he was afraid that the Council would be under the painful necessity of accepting it.

Mr. MORGAN seconded the motion.

Mr. FLEMING spoke of the diligence and faithfulness with which Mr. Coates had always discharged his duties, and trusted that some means would be found by which to convey to him the regret which the Council and the profession experienced at the severance of one who had so long been connected with the whole body of the profession.

Professor SIMONDS expressed his individual regret at Mr. Coates's resignation, and bore testimony to the efficiency and honesty with which he had performed the duties of his office. He suggested that their regret should take some tangible form—say of an honorarium for a given length of time, giving him so much per annum. He was only speaking on the broad principle of the case, and had no particular scheme to lay before the Council.

Mr. HARPLEY endorsed the opinions of the previous speakers, and referred to the services Mr. Coates had rendered to him in his year of office as President—a year the labours of which were rendered more arduous from the fact that the Juries Bill was before the House, entailing a great deal of correspondence on the part of Mr. Coates.

Mr. FLEMING said the thanks of the Council were due to Mr. Coates for his offering to continue the duties of Secretary until another Secretary was appointed, and to instruct his successor in the duties of his office.

The PRESIDENT, in putting the motion to the meeting, expressed his regret that Mr. Coates's resignation had taken place during his year of office. He should support most cordially any scheme for a tangible recognition of Mr. Coates's services.

The motion was then carried.

Professor SIMONDS moved that the question of the amount to be awarded to Mr. Coates be postponed, on the understanding that it was placed on the agenda for the consideration of the Council at the next quarterly meeting.

Mr. HARPLEY seconded the motion, which was carried.

A Committee, consisting of Messrs. Collins, Dray, Fleming, Harpley, and Professor Simonds, was appointed for the purpose of selecting a new Secretary.

On the motion of Mr. WHITTLE, seconded by Professor WALLEY, it was resolved that the new Secretary be not a member of the Council.

Mr. COLLINS proposed, as a further instruction to the Committee, that the future Secretary be not a member of the profession.

Mr. DRAY seconded the motion.

Professor WALLEY proposed, as an amendment, "That the new Secretary should either be a member of the College or not."

Mr. REYNOLDS seconded the amendment.

Mr. BLAKEWAY supported Professor Walley's amendment, on the ground that it would be an injustice to take the office entirely out of the hands of the profession.

On being put to the vote, fifteen members voted for Professor Walley's amendment, and four for Mr. Collins's motion.

The amendment was therefore declared carried.

On the motion of Mr. REYNOLDS, seconded by Professor WALLEY, the

Secretary's salary was fixed at £120, with the same allowance as the late Secretary.

Mr. Coates was then called in, and informed of the Council's deliberations and decision.

Mr. COATES, in a few words, expressed his regret at being compelled to sever himself from the Council, and thanked them for their kindness and consideration.

The Proposed General Meeting.

The SECRETARY read a letter from Mr. Loch, enclosing the opinion of Mr. Wolstenholme, Q.C., relative to the requisition for calling a general meeting of members of the Royal College of Veterinary Surgeons. The opinion of counsel was to the effect that a discussion raised in any ordinary meeting of the members of the Royal College of Veterinary Surgeons, as to the course of practice of the Royal Veterinary College, would not be wholly irregular; but he did not mean the inference to be drawn that any resolution come to at such meeting would have the least binding power over the Royal Veterinary College. The Chairman would, perhaps, be technically right in refusing to allow such discussion, or to enter any resolution on the subject in the minutes; at the same time he did not see that to allow the discussion or to enter a resolution on the minutes, expressing the opinions of the members present, on a matter personally affecting them, would be wrong. No further action would require to be taken, except by communicating the resolution to the Veterinary College, and no opportunity would be given for questioning the regularity of the proceeding. It would, however, be right to state the resolution as passed by the members present, and not describe it as a resolution of the meeting.

Professor AXE said it occurred to him that the main point in question was, whether it was not beyond the jurisdiction of the Council, as a political body presiding over veterinary science, to allow themselves to call a meeting to consider a subject which was quite beside the object for which the College was founded; and he thought the opinion of counsel stated that there was no such power.

Mr. FLEMING said that, according to the latter portion of the opinion, the matter seemed to be left in the hands of the President, and there would be found there a very important "perhaps," which left it, to a large extent, optional. With regard to the question itself, he thought the instructions given to counsel had not been properly framed. Whether the petition was acceded to or not, was a question more for the profession than the Council to decide, inasmuch as the object of the petition was as much for the protection of the profession now as was the movement lately made in the Council to modify the Charter sought to be obtained by the Royal Veterinary College.

Mr. HARPLEY said that on the previous day there was a meeting of the General Purposes Committee of the Royal Veterinary College, and the subject of the petition was discussed. It was mainly pointed out to the Governors that counsel's opinion was adverse to the power of the President to call a general meeting of the body corporate to discuss the matter in question; but the Governors were perfectly willing to listen to any complaint the profession might have against them or their College. In the present instance, it was suggested by the Chairman that a small sub-committee of the General Purposes Committee be deputed to communicate with a small section of the gentlemen who, with Mr. Moore, raised the question, and that the matter be discussed at the Royal Veterinary College on any day they wished to name.

Mr. FLEMING pointed out that the opinion of counsel did not state that the profession had any right to petition the President to hold a general

meeting of the profession. Those who drew up the petition must, he thought, have been misled by the bye-laws, and if so, it was not their fault. They thought they had a grievance, which, on the face of it, was apparent at the time they drew up the petition.

Professor AXE submitted that the gentlemen on whose behalf the petition was drawn up were very grievously wronged; but the Governors of the Royal Veterinary College were always accessible, and it was a very great pity that the Council had been called upon to do anything in the matter. It was a matter for the profession, and the profession ought to approach the Governors in a proper manner.

After some further discussion,

Mr. HARPLEY moved that an answer be sent to Mr. Moore, to the effect that the Council are not able to comply with the petition of the memorialists.

Mr. DRAY seconded the motion.

Mr. GREAVES said that the resolution gave effect to the view he had all along held. He was of opinion that the grievance complained of was not nearly of the magnitude that the petitioners had set forth. He agreed with Mr. Harpley that the Governors of the Royal Veterinary College should receive a deputation from the town and country practitioners. It was unfortunate that counsel's opinion had not cleared up the point at issue.

The resolution was then put and carried.

Report of Examiners.

The SECRETARY reported that at the meetings of the Court of Examiners, held January 5th and 6th, ten students from the Royal Veterinary College passed their examination and obtained the diploma of the College, and three were rejected; also that two students from the New Veterinary College, Edinburgh, and one from the Glasgow College, were rejected. At the meetings on the 7th and 8th January, thirteen students from the Royal Veterinary College passed their "second examination," and one was rejected. At the meetings on the 9th and 10th fifteen students passed their "first examination," and six were rejected.

A letter was received from Dr. Dunsmure, enclosing certificates from the Edinburgh and Glasgow schools, and stating that the examinations would take place in Edinburgh on January 22nd. He also wished to know whether the Council would be willing to pay the expenses of three rejected students who had gone up to London for examination.

The SECRETARY explained that the students by thus coming to London had saved the Council considerable expense, which would have been incurred had they called a special Board of Examiners to meet in Edinburgh or Glasgow.

It was resolved, on the motion of Mr. TAYLOR, that the three students should have remitted to them their third-class return railway fares.

Letters were received from a number of rejected students, asking their case to be re-considered, with a view to their coming up for another examination.

The SECRETARY was instructed to write in reply that the application could not be entertained.

A letter was read from Mr. Green-Armytage, asking for another diploma, in lieu of one lost in action at the Cape.

The Secretary was instructed to forward to Mr. Armytage the usual certificate, stating that he was a member of the College.

A letter was received from Mr. Menzies, Secretary of the Highland and

Agricultural Society, asking for two copies of the Supplemental Charter, which, the Secretary stated, had been forwarded.

The SECRETARY stated that upwards of forty applicants, holding the Highland and Agricultural Society's certificate, and who had paid their fees and been approved of by the Principals of the Scotch Veterinary schools, desired to have a diploma.

The Secretary was instructed to send the diploma to each of the applicants.

The Matriculation Examination.

Professor SIMONDS read an official communication from the Secretary of the Royal Veterinary College to the Secretary of the Royal College of Veterinary Surgeons, dated 14th January, 1880, which stated that the Governors approved of the scheme for the matriculation examination for all the schools, and were desirous of impressing upon all the schools the necessity of a full agreement in submitting to the same rule. If they did this, the Governors would interpose no difficulty.

The SECRETARY stated that the following letter had been addressed to the Principals of the various schools:

Royal College of Veterinary Surgeons,
10, Red Lion Square, W.C.
Dec. 6th, 1879.

Gen. Sir F. Fitzwygram.
Jas. Collins.
Geo. Fleming.

SIR,—The committee, as per margin, appointed by the Council of the R.C.V.S. to draw out a scheme for the proposed matriculation examination to be held under the direction of the Council at all veterinary schools, beg to submit herewith the draft of an examination sheet, with two conditions relating to the examinations, for your favourable consideration.

If you approve of the scheme, will you be good enough to reply accordingly for the information of the Council.

I have the honour to be, sir,
Your obedient Servant,
WM. HY. COATES,
Secretary.

Professor Simonds.
" Williams.
" Walley.
" McCall.

1. No school shall be compelled to admit a candidate, even though he may pass the required examination.
2. Any school may hold a higher examination.

The following letters were received in reply :—

New Veterinary College, Gayfield, Edinburgh.
December 9th, 1879.

DEAR SIR,—I return "Educational Scheme," approved of. I, however, think that "Dictation" should be added to English Grammar.

Yours faithfully, W. WILLIAMS.

Royal (Dick's) Veterinary College,
Clyde Street (off St. Andrew's Square), Edinburgh.
December 8th, 1879.

W. H. COATES, Esq.

SIR,—I am in receipt of your communication—with draft scheme of the new matriculation examination—which I have laid before the College Council.

We agree with the general scheme therein drawn out (but we think the first condition anomalous and unnecessary), providing the suggestions contained in my letter of the 20th ult., to Sir Frederick Fitzwygram are embodied in it.

I am, yours faithfully,
THOMAS WALLEY,
Principal.

Glasgow Veterinary College,
83 and 85, Buccleuch Street, Garnethill, Glasgow.

W. H. COATES, Esq. *December 25th*, 1879.

DEAR SIR,—I am in receipt of your favour regarding the matriculatory examination of veterinary pupils, and after consulting with Principals Walley and Williams, I cannot see my way to approve of the scheme which you have submitted to me under the authority of the Council of the Royal College of Veterinary Surgeons. Some time ago I had the honour of a visit from Col. Fitzwygram, and in course of conversation he asked if I would be willing to come to an understanding with the other colleges as to the standard of qualification and other conditions upon which students would be admitted to the colleges, and to which I gladly replied in the affirmative; but it is something very different to desire me, as you have now done, to hand over the power which this College possesses of fixing the conditions upon which pupils will be admitted to the undisputed control and authority of the Council of the Royal College of Veterinary Surgeons.

That there is an urgent necessity for the colleges uniting and fixing a uniform educational test I freely grant, but the colleges, in my opinion, can carry through this reform without calling in the aid of the Council of the Royal College of Veterinary Surgeons, and a step in that direction has already been taken; but should it fail in accomplishing the objects sought, I shall be glad to submit the point or points in dispute to the decision of your Council.

I am, yours truly,

JAMES MCCALL,
Principal.

Professor SIMONDS moved that the four letters now read be placed upon the minutes.

Mr. DRAY seconded the motion, which was carried.

Professor WALLEY said he wished to correct a mistake in the minutes. It had been stated that he had laid the matriculation scheme before the Trustees, but he had done no such thing. The matter had never been brought before the Trustees at all, but simply before the College Council, which usually dealt with these matters.

Mr. GREAVES thought it would be an advantage to each college if the question of preliminary examination was left in the hands of the Royal College of Veterinary Surgeons. It would be a matter of much regret if the schools did not act in concert. He feared that if the matter was left to the colleges there would be a sort of feeling of rivalry and competition that would step in and prevent them acting in concert. Notwithstanding Professor McCall's letter he (Mr. Greaves) thought that gentleman might be induced to leave the matter in the hands of the Council, which would be a great advantage to the profession.

Mr. FLEMING thought it was a matter of regret that Professor McCall had dissented from the arrangement. If there was one thing more necessary than another, it was that there should be a uniform system of education. It was a mere elementary education which the Royal College asked for, and he was sure that no school having the welfare of the profession at heart, would object to its students being submitted to such an examination. He trusted Professor McCall would see his way to join the other schools in acceding to the proposal, which was made entirely for the good of the profession, and would, if carried out, do much for the benefit of the schools themselves.

On the motion of Mr. HARPLEY, seconded by Mr. TAYLOR, the scheme for matriculation was referred to the next Council meeting.

The obituary notice was read.

The following letter was read from the Secretary of the Royal Agricultural Society :—

Royal Agricultural Society of England,
12, Hanover Square, London, W.
December 16th, 1879.

DEAR SIR,—I am instructed by the Veterinary Committee to ask you to be so good as to ascertain from the Council of the Royal College of Veterinary Surgeons whether they could undertake to nominate Examiners for the Society's veterinary prizes and medals, so that identical examinations might be held simultaneously in Edinburgh, London, and, if necessary, in Dublin. The object in view is to promote a co-operation between the several agricultural societies, so that the prizes might be equally open to graduates of the Royal College of Veterinary Surgeons, whether they are resident in England, Scotland, or Ireland, and whether they have been educated at the Royal Veterinary College or at any other recognised veterinary school.

Your early attention to this matter will much oblige

Yours very faithfully,

W. H. COATES, Esq. H. M. JENKINS, *Secretary.*

Mr. HARPLEY explained that the letter was in consequence of a meeting of the Royal Agricultural Society a few weeks ago. The Society regretted they could only send up one or two candidates to compete for their prizes, and they were now in communication with the Highland and Agricultural Society in the hope that Scotland would unite with them in having the prizes made general among the students. He did not know if the Council could now deal with this question, but he should be glad if some instructions were laid before the General Purposes Committee at the next meeting.

Mr. FLEMING moved that a letter be sent to the Secretary of the Royal Agricultural Society, informing them that the College would be happy to assist the Society in every way, and would appoint Examiners as soon as the Council had ascertained that an agreement had been arrived at between the Royal Agricultural Society and the Highland and Agricultural Society of Scotland.

Professor WALLEY seconded the motion, which was carried.

The examination for the Royal Agricultural Society's prizes and medals was fixed to take place at such time as would best suit the convenience of the Examiners.

Messrs. Mayer, Gresswell and Lepper were appointed Examiners.

The consideration of the examinations to be held in Scotland was deferred.

It appeared from the report of the House Committee that the negotiations for the premises in Fitzroy Square had fallen through, the solicitor having expressed his doubts as to the genuineness of the title.

Finance Committee.

The report stated that the vouchers and receipts for payment during the past year had been examined and found correct. The present liabilities were £131 6s. 3d., which the Committee recommended should be discharged. This would leave a balance at the bankers of £318 8s. 7d.

On the motion of Mr. WHITTLE, seconded by Mr. CARTWRIGHT, the report was received and adopted.

Cheques were ordered to be drawn for the current expenses.

Annual Dinner.

Professors Williams, McCall, and Walley, and Mr. Robertson, of Kelso,

were appointed as a committee to make arrangements for the annual dinner at Edinburgh.

This concluded the business of the quarterly meeting.

A SPECIAL MEETING

was then held. The amended Bye-law No. 7, having been read,

On the motion of Mr. DRAY, seconded by Mr. TAYLOR, the amended Bye-law No. 7, was adopted, to be confirmed within fourteen days, in accordance with the Charter.

The question of the alteration of Bye-law No. 4, previously moved by Mr. Collins, who had left the room, was postponed until the next quarterly meeting, as was also the consideration of the following notice of motion by Mr. Fleming :—"That no student receive the diploma of the Royal College of Veterinary Surgeons until he shall have attained the age of twenty-one years, and that previous to going up for his final examination he shall furnish the Secretary of the Royal College with the baptismal register of his birth, or a certified copy thereof."

The consideration of the alteration of Bye-laws Nos. 32, 33, and 47, by Professor Walley, was also postponed to next meeting.

Mr. FLEMING gave notice that at the next quarterly meeting he should move, "That steps be immediately taken by the Royal College of Veterinary Surgeons to obtain an Act of Parliament for the protection of the title of "Veterinary Surgeon," or other titles conferred by Royal Charter."

On the motion of Mr. DRAY, seconded by Mr. TAYLOR, a vote of thanks was accorded to the President, and the proceedings terminated.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Association was held at the Blackfriars Hotel, Manchester, on 17th December, 1879. W. Dacre, Esq., President, in the chair. The minutes of the last meeting were read and duly confirmed, after which Mr. E. FAULKNER proposed, as a member of this Association, Mr. Litt, of Bolton. Mr. FERGUSSON seconded the proposition, which was carried.

Mr. PETER TAYLOR proposed Mr. R. Roberts, of Kendal, as a member—seconded by Mr. WOODS, and carried.

After considerable discussion respecting the election of Lieut.-Gen. Sir F. Fitzwygram, bart., Prof. Williams, Messrs. Geo. Fleming, Peter Taylor, and Thomas Greaves, as Honorary Associates of this society, it was decided by Rule XVII., Section I., That members could not be made Honorary Associates, only strangers, or any other person who was not a member, and, according to Section II. of same rule, there must be three-fourths of the members present before any person can be so elected.

Mr. T. TAYLOR therefore proposed that the names of Lieut.-Gen. Sir F. Fitzwygram, bart., Prof. Williams, and Mr. Geo. Fleming be left on the list, and brought forward whenever there was a quorum for such an election. Seconded by Mr. T. Greaves, and carried.

Mr. JAMES LAMBERT then opened the adjourned discussion on Mr. Geo. Fleming's paper, read before this Association at the last meeting, viz., "The Responsibility of the Veterinary Surgeon." He said: When I spoke on the above subject at the last meeting, I ventured to say that I thought an amount of responsibility was assumed in his paper, which is out of proportion to the remuneration received by veterinary surgeons. The two subjects which appear to me to merit most attention are, the examination of horses as to soundness, and injuries inflicted in shoeing. As to the latter, I will only say that it appears to me most unjust, for many reasons, that

veterinary surgeons should be liable; as to the former, we can see that veterinary surgeons are becoming more and more in request for this duty; and as it is done for (considering its importance) a small fee—generally half-a-guinea—we must take care that we do not admit, for mistakes, a pecuniary liability absurdly unproportionate to the payment received. Many veterinary surgeons were alarmed by the apparently severe opinion of Mr. Fleming's paper on the question, and began to think whether examining horses for soundness, and veterinary practice generally, was not a very risky business. In Ireland the veterinary surgeons disclaim any pecuniary liability for their opinion, and their charge is one guinea, and examinations are of everyday occurrence with them. I do not see why we in England, and in fact everywhere, should not also charge a guinea. I also believe, and say it advisedly, that a veterinary surgeon has not much legal pecuniary liability in his practice; when he makes a mistake, what he has most to dread is loss of reputation, and consequently loss of profit.

Mr. Lambert quoted the opinions of several barristers and solicitors; they had looked over causes in the law-books, but found none; so cases are rare, and it was anticipated that they will continue to be so. "They all concurred in the opinion that there must be proved gross ignorance or negligence, and you must decidedly outweigh your opponent by numbers if you can, and if possible, throw a professor or two into the scale. This is a nice state of things—'Outweigh your opponent by numbers;' it shows what lawyers think of professional evidence, and the same applies to the medical profession. These opinions show us how urgently reform is needed, and that veterinary surgeons should be united, and never try to make money in the witness-box at another's expense. Professional evidence should be selected by the court, and not by the advocate. Professors generally should never appear in order to secure a fee, in cases where they have no concern—in fact, they should only appear in order to prevent gross injustice; if they appear for any other reason, it is degrading to their teaching office, and to the college to which they belong."

Mr. T. A. DOLLAR said he quite agreed with Mr. Lambert. If a veterinary surgeon used ordinary diligence and sagacity in operations and in giving opinion, using good instruments, being steady, and taking every possible care, then he cannot be liable for any loss that may arise.

Mr. T. TAYLOR, A. LAWSON, T. HOPKIN, JOHN LAWSON, etc., etc., all coincided with the opinion of the above gentlemen.

Mr. PETER TAYLOR thought the responsibility of the veterinary surgeon to be very great. "Your clients do not bring forward a claim against you at the time, but when they find one or two experts whose opinion is against you, then they try what they can do. Mr. Lawson says, 'Who can expect a young veterinary surgeon, coming from a college, to be able to do everything right?' I contend they are liable if they do not know, and if experts say they have made a gross mistake. We have a great difficulty to contend with. All horses are different—no two alike, and men differ in opinion of them, consistently, honestly. What we must endeavour to do is, to do our duty honestly and straightforwardly, giving our opinion to the best of our ability, and risk the consequences."

Mr. GREAVES observed: The discussion on this subject will have done our profession a great service if we only arrive at a clear, enlightened, and logical conclusion—a conclusion which will not only commend itself to our senses, but which will be, at the same time, legally sound, and a safe protection. I have studied this subject as carefully and as earnestly—nay, perhaps more carefully and more earnestly than the majority of my professional brethren. At the time I compiled my paper upon this subject, which I read before the Liverpool Association in 1868, I perused every passage in "Oli-

phant's Law of Horses," and every paper that I could find which had reference to veterinary surgeons' responsibility. I was so anxious to make my paper worthy of my profession, that I sought the opinion of Messrs. Lock and McLaren, of London, the solicitors to the College; they considered the whole matter carefully and fully, and gave me their opinion. They also advised me to get the highest counsel's opinion upon the subject. I gave them authority to obtain this, which they did; these several opinions will be found recorded at 256 and following pages in the *Veterinarian* for 1868. A short time ago, I received a letter from Mr. Tom Taylor: it contained a solicitor's opinion upon this subject, the pith of which is, we are bound to bring a sufficiency of skill and sufficiency of care in the performance of every operation, and in the examination of every horse as to soundness. Where this is not exercised, we deserve to be made to suffer. This inefficiency and negligence must be gross, and evident to ordinary thinking men; but where proper skill and care are practised, and such opinion is disputed and contested, then, he says, we must get the opinion well supported by quantity and quality of veterinary evidence.

Since our last meeting, I, in company with a solicitor of eminence, have carefully drawn up a form of certificate, which I now propose to this meeting, and through it to my profession. This is as follows:—

"I hereby certify that I have this day, at the request of Mr. ———, of this city, examined a bay gelding in respect to soundness, and that I consider such horse to be —— years old, and sound. This certificate is given after careful examination, to the best of my judgment and belief, but subject to my not being held pecuniarily responsible for the opinion expressed in such certificate. "*Signed* THOMAS GREAVES."

I strongly commend this form of certificate, especially when it is a high-priced animal we are examining, or when we apprehend advantage may be taken of us. There may be some of my professional brethren who will pooh-pooh this form of certificate, and say it cannot be binding; they may say "See the notice on the railway passenger's ticket, it is not legally binding;" but I am advised that there is not the slightest similarity between the two cases. Perhaps some may cavil who have never given five minutes' deep, earnest consideration to the subject in their lives; but I ask the more thoughtful, enlightened, and earnest men in my profession to ponder it over seriously; for we cannot conduct our daily avocation, such as it is, with a halter like a millstone round our neck, as is now the case, liable to be tripped up at every step we take, with other eminent experts giving evidence in a court of law against us. *Something must be done.*

If the want of skill, or the want of due care is palpable, then neither this form of certificate or any other form of certificate can protect us; nor is it right it should do. But if we have exercised proper care and brought to bear sufficient skill, then the above form of certificate, "*it being a notice to the party of the terms, and the only terms, on which the certificate is given,*" will entirely remove our responsibility, and will prove a perfect and complete protection.

Mr. J. B. WOLSTENHOLME had placed upon the table a number of the capsules of the "Trichina Spiralis," with a short history. He said: Some months ago, a human subject being dissected in Owen's College, Manchester, was found to contain Trichinæ. A portion of muscle was given to me, in which I found a large number of the capsules of the *Trichina Spiralis*. Of the specimens I exhibit, one is an entire capsule, the other a section, showing its position relative to the muscular fibres. All the capsules have undergone calcareous degeneration (being the calcareous particles of the first discoverer), and must in consequence have been in the subject for a long time.

These specimens were viewed with great interest by members, and a cordial vote of thanks was accorded Mr. Wolstenholme.

The SECRETARY then read a communication which he had received from the Secretary of the Liverpool Veterinary Medical Association, requesting the members to consider a resolution passed at a recent meeting of that society, with respect to the election of candidates to the Council of the Royal College of Veterinary Surgeons. After considerable discussion, the matter was left in the hands of a committee, which was at once formed, viz., Messrs. W. A. Taylor, J. B. Wolstenholme, A. Lawson, E. Faulkner, the President, and Secretary, and a resolution was passed, requesting the Secretary to communicate with the Secretary of the Liverpool Veterinary Medical Association, thanking him for his letter, and intimating to him the decision on the above.

The following gentlemen were then unanimously re-elected officers of the Association for the ensuing year :—President, Mr. W. Dacre ; Vice-Presidents, Messrs. T. Hopkin, John Lawson, and W. A. Taylor ; Treasurer, Mr. A. Lawson ; Secretary, Mr. Sam. Locke.

A cordial vote of thanks to the office-bearers for the past year, which was carried by acclamation, closed the proceedings.

SAM. LOCKE, *Hon. Sec.*

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

THE ordinary quarterly meeting of this Association was held at the Medical Institute on the 14th November, Joseph Welsby, Esq., President, in the chair.

The minutes of the previous meeting were read and confirmed.

Mr. ELAM then communicated the following notes of a case of "Fracture of the Sesamoid Bones of both Fore Legs in a Cob Mare," exhibiting the specimens. He said : On the 21st of June last, a grey cob, 14.2, six years old, was brought to my infirmary suffering from a slight cold, the owner informing me that he intended to sell it as soon as it had quite recovered. On carefully examining it in the loose box ; I found that it appeared to move slightly lame, or tender, but as the owner had not mentioned anything regarding that when he left it, I thought that it might be of no consequence, and that it would likely pass off with a few days' rest.

A few days after the owner called, and I drew his attention to the fact, when he said, Oh, yes ; she had gone a little tender about a month ago, first on one foot and then on the other ; he had her shoes taken off and her feet carefully examined, but could find nothing to account for the tenderness. He then had a pair of india-rubber pads put on, thinking that they might improve her, and she went very well after. However, as there was a little swelling and heat about the fetlock joints, I had a cooling lotion and cold-water bandages applied to them.

In ten days she appeared to have quite recovered her usual health, and the lameness had almost completely passed off, when the owner called, and said that he would send his son for her in the morning, which he did, and my groom remarked how much improved she walked as she was being led out of the yard.

In less than half an hour after, a messenger came back to say that the mare lay down in the stable as soon as she got there, and broke out into a profuse perspiration, and that she appeared to go suddenly lame just before she arrived at the stable.

The owner requested my groom to take her back to my infirmary, but before she had got half the way, her fetlocks came in contact with the ground and she was unable to proceed any further. A float was then pre-

cured, into which she was placed and taken to the infirmary. When I returned I found her lying quietly in the box, and so far as one could observe, very comfortably. I got her lifted up on to her feet with great difficulty, but every step she took the toes of both fore feet turned up, and the inferior extremities of the large metacarpal bones came in contact with the ground. After a careful examination in connection with the symptoms, I became quite satisfied that the sesamoid bones of both fore legs were fractured, and that treatment was out of the question. The owner called on the following day, and after explaining the nature of the fracture to him, I advised him to have her destroyed, which he agreed to.

A *post-mortem* examination showed all four sesamoid bones fractured transversely about the lower third, the upper two-thirds having the appearance of being torn away by the powerful suspensory ligament, whilst the inferior third was held by the inferior sesamoidal ligaments, thus exposing the internal structure of the bone.

I am of opinion that the bones had been diseased at least twelve months, and that the animal would have shown signs of it to a close observer.

The above communication gave rise to a very interesting discussion, in which almost every member present took part. The following is a brief summary of the principal points touched upon :—

Mr. ELAM, in reply to questions by the various speakers, said that he could not detect any diseased condition in any of the other bones of the body; and that, from a careful examination of the sesamoid bones, made immediately after taking the specimens home, he was of opinion that they were affected with Caries.

The general opinion expressed by the other members, however, was in favour of the diseased condition being of the nature of Osteo-porosis, from the fact that the lesions occurred simultaneously in both fore-legs, without the infliction of any adequate strain to produce them if healthy. The absence of pain when the animal was at rest was considered to contra-indicate the presence of Caries, and that, although from the specimens being dry, and surrounded with their periosteal covering, and having the ligaments attached, no very decided opinion could then be given, still it was stated that when the long bones only are affected, the presence of the diseased condition is difficult to determine until after the bones have been either macerated or boiled.

As to the cause or causes of Osteo-porosis no very definite opinion was arrived at. It had been observed in every variety of breed of horses, and to occur under different systems of feeding. It generally affected young animals, although not invariably so. The most remarkable development of this disease was related by Mr. Woods, of Wigan, in which, he said, about a dozen of Hungarian ponies, belonging to a mining firm in his district, became almost simultaneously affected, the acute symptoms manifesting themselves immediately on being put to work, after having rested during Whit-week. One of these ponies was ten years old, and had been in the pit for seven years, while none of the others were over five years old, and had been in the pit for from two to three years.

He (Mr. Woods) attributed the disease, at the time, to the ponies getting too much Indian corn while idle; and it was a curious fact, that after its withdrawal no more cases occurred at that period.

The general opinion expressed by the members, however, was, that the principal cause of this disease was some constitutional diathesis, which certain other conditions might intensify. And although in Mr. Wood's cases no previous symptoms had been noticed, in the cases related by the other members, symptoms of lameness of a shifting and recurrent character had been invariably observed.

Mr. ELAM then communicated the notes of two cases of "Death from In-

testinal Calculi." The first case was that of a chestnut mare belonging to a detachment of the Royal Dragoons, which had arrived in Liverpool the previous day, from Colchester. She was reported to be in good health and spirits during the whole of the journey, and only began to show signs of pain on arrival in Liverpool. Briefly, the symptoms were—Acute abdominal pain, pulse fifty, visible mucuous membranes of a dull pale red ; mouth hot and dry, with a loathing of food and water. The fourth day she drank water freely, and ate a little ; no fæces were passed at all during the attack. In exploring the rectum he observed that no solid fæces could be felt, indicating that the obstruction was very near the rectum.

The treatment adopted was, repeated small doses of aloes in conjunction with carbonate of ammonia, frequent injections, and gave small doses of chloroform to allay the pain. On the evening of the fourth day the pulse became accelerated and weak, and the symptoms of pain ceased. She died on the following day, the fifth after her attack.

He (Mr. Elam) made a *post-mortem* examination, and found the calculus shown firmly embedded in the rectum, about five feet from the anus.

Mr. Elam's opinion was, that the long march of over two hundred miles had caused or accelerated the backward movement of the calculus from the large intestines onward to the rectum. He considered that a careful exploration of the rectum in all cases of abdominal affections is an invaluable aid to a correct diagnosis, and might lead in some cases to the removal of the obstruction.

The other case was that of a bay cart-mare, six years old, which I (Mr. Elam) was asked to attend in July last. I found her manifesting symptoms of Colic, for which I gave her a stimulating drink, and administered ʒiij. of aloes. The next day she appeared better, but in about a week after I was again sent for to attend her, when the owner now told me that she had been griped a little every day for a fortnight. I had her brought to my infirmary.

The symptoms were, briefly, as follows : Visible mucous membranes of a dull pale red, mouth hot and dry, frequent pawing, and restless when lying; no symptoms of acute pain, rolled very seldom, but had a perfect loathing of food and water. This condition continued for ten days, when the bowels began to act freely and she commenced to eat and drink heartily. Three days after she was discharged as all right. The treatment, as in the other case, was repeated small doses of aloes in conjunction with the carbonate of ammonia.

In about a week after I was again sent for to attend this mare, when the same symptoms presented themselves. As I now considered the case a hopeless one, and the owner being a poor man, I recommended him to turn her into a good field, and if she should die, to inform me. The mare died in about three weeks after. I made a *post-mortem* examination, and found a large calculus at the junction of the large or double colon with the single colon.

Mr. STORRAR also exhibited some specimens of calculi, pyramidal in shape, which had been so formed by their action on one another in the bowels.

A general discussion followed, of which the following is a brief summary.

(*a*) That there is no reliable diagnostic symptoms of the presence of calculi, except in such recurrent cases as the second one in Mr. Elam's communication.

(*b*) That, although in individual cases, such as the formation of hair-balls in calves, and where an animal has been known to swallow some peculiar article which has formed the *nucleus* of a calculus that has been either evacuated or found, *post-mortem*, at a certain period afterwards, there are no very reliable data upon which to form an opinion as to the length of time which these calculi require to form. As an instance of this, Mr. T. Taylor referred to a horse within his own practice, which had been in the habit of manufac-

turing these interesting articles for several years, their size varying from that of a billiard ball to that of a marble. These he discharged in quantities of six or seven at once, at intervals of four or five months.

Still, he enjoys excellent health, and is in good condition, and has never been known to have an attack of Colic, his (Mr. Taylor's) attention being only called to him by the attendant, with the quaint remark that his horse has commenced the marble trade again. The character of the food, and the gastric habits of the animal was believed to have considerable influence in the formation of calculi.

(*c*) Repeated doses of purgative medicine, in all cases where the bowels did not respond to an ordinary dose, was generally condemned, nerve-stimulants in such cases being generally recommended.

Dr. GREENWAY suggested the administration of metallic mercury in cases of obstinate obstruction, as is done in the human subject; but several members considered that the horizontal position of the bowels in our patients, combined with the anatomical arrangement of the *Ilio-cæcal valve*, militated against its success.

(*d*) In all cases of abdominal affections in the horse, accompanied with Tympanitis, tapping was generally recommended, as being both safe and beneficial. The operation should be performed in the same region as is tapped for hoven in cattle.

(*e*) As to the best course to be adopted in cases where the presence of calculi had been diagnosed, it was considered by some that purgative medicines, either *aloes* or *oil*, did more harm than good.

Mr. STORRAR then communicated the following notes of a case of "Ruptured Abdominal Muscles."

On the 17th October last I was called to see a very valuable brood mare, of the heavy Shires breed, seven years old, and the dam of three foals. She had not been in harness for several years, having been laid aside from work for breeding purposes and exhibition. She had been kept up to the mark (to use showing phraseology) till the shows were over, when it was considered prudent to allow her to get a little down in her bulk, her last foal being still unweaned. She was grazing in a very rich pasture during the day, and at night was taken up to a large, comfortable loose box, where she had a small portion of grass, a feed of bruised oats boiled, and bran. She again had a similar feed in the morning before being turned out to pasture. She was an uncommonly good-tempered animal, never running or exerting herself, but most industrious as a grazier—a magnificent animal, weighing nearly eighteen cwt., lengthy, and beginning to get a little low in her back, presumably from having had several foals, and from being a good doer. Such was the animal which I was called in to see.

The groom's statement was, that on the previous evening, when calling her to come into her box, he thought she went a little stiff on the off hind leg. She ate her mash with relish, and having left her for a short time, he went back, and found her lying down comfortably. Before going to bed he again looked in at her, and found her up and eating her grass. These circumstances relieved his mind so far, that he did not think it necessary to say anything to his master that night.

On the following morning, still thinking her somewhat stiff on the off hind leg, he informed his master, who went into the field, but was unable to satisfy himself that anything was wrong; he, however, said to the groom, "You know the mare's general appearance better than I do, and since you do not think her right, go for Mr. Storrar."

Upon my arrival the groom pointed out a swelling in the right flank, very slight, soft, and evidently œdematous; there was also a little similar swelling behind the elbow.

The mare was still very fat, but the groom said that she had sunk very much in her appearance—more than she ought to have done, considering what she was eating. The mare seemed low in vital force, her pulse soft and languid—she kept up her appetite as usual.

There was no swelling of the legs as we usually find in cases of poor blood—yet these swellings were œdematous—and the case seemed a likely one to recover by a change of diet and a little alterative medicine. I therefore gave her a six-drachm purging ball, which acted very moderately, while she continued to eat her mashes with relish.

I ordered the green grass to be stopped. Good old hay to be substituted, the bruised oats and bran to be given dry morning and evening, and her usual walk at pasture to be allowed her during the day. After the medicine had acted she seemed better on the right side, but on the 19th, when I again saw her, there was a very considerable œdematous swelling on the left side of the flank—this to me was more puzzling than ever. I asked if there was any cow or other animal in the field, that could have interfered with her; as this looked more like an injury to the parts than anything else I could think of; but I was told that there was no animal in the field that could have injured her.

I gave her diuretic medicine, and expected a favourable result from this and the change of diet, but the swelling continued to increase, and I requested that some other professional man should see her. Upon the arrival of my professional friend we agreed to puncture the swelling so as to allow of an escape of serum. Upon my doing so, and introducing my finger to break up the cellular tissue, there followed an alarming flow of serum and red corpuscles, which I hastened to stop. Of course there was a certain amount of clot formed, owing to the blood from the skin, but the great bulk of the fluid was watery.

Suffice it to say that, notwithstanding every attention, the animal died on the morning of Saturday, the 25th.

The *post-mortem* showed that the swelling in the flanks had arisen from a rupture of the transverse abdominal muscles; the laceration proceeded to extend, no doubt, every time she raised herself from her bed—which she did very frequently—immediately before death. On the left side the rents were right through the muscles to the skin, and in several places the serous effusion in the abdominal cavity was great, while here and there a black clot floated in it.

The special interest attached to this case is the previous history of the animal's life and treatment, and the very unusual occurrence of such a case. I have on two previous occasions seen mares give way at the attachment of the "rectus abdominis muscle" to the pelvis—thereby allowing the abdomen to descend very low, and giving the animal a very unseemly appearance; but both these cases occurred very near to the time of the mares' foaling.

The mares foaled, reared their foals, and did well. In the present case the mare was in foal, but the fœtus was small, and could not be a factor in the case.

The pathological questions which I have asked myself, and which I now suggest to you for your opinions, are these:—

Had the repeated fattenings to which the mare had been subjected for years, produced any tendency to fatty degeneration of the muscles of any part of the body?

The heart was fatty, but weighed about eight pounds—quite as heavy as I would have expected the heart of an animal out of condition to have been.

Had the very limited exercise which the mare had been subjected to a tendency to generate fat at the expense of the muscular tissue?

Had the bulky, moist, non-nutritious grass, of which she partook so largely, a tendency to distend her abdominal organs, and to relax the system generally, so that the animal may be said literally to have fallen to pieces?

In my very large experience among brood mares of all breeds, I have not met such another case, and I have introduced it to your notice to-night in order that I may elicit your valuable opinions upon it. I have purposely withheld all names—for reasons satisfactory to myself. I trust, however, that you will agree with me, that the case is a very interesting one.

Mr. HILL, who stated that he was the veterinary surgeon who consulted with Mr. Storrar over this case, said that he differed in opinion from Mr. Storrar as to the immediate cause of death, and also as to the time when the muscular lesions took place.

The mare, he said, had been repeatedly prepared for exhibition. She had taken sixteen first prizes; she had then a foal suckling her, and a fœtus in utero.

On his arrival he certainly did not take a serious view of the case, for beyond the swelling, the pulse was a fair one, and the animal bright. As usually adopted by himself in such cases he suggested hot fomentations, and subsequently, when the effusion had become fluid, scarifications; and, medicinally, diffusible stimulants, with iron and nutritious diet. However, before the fomentation was commenced, the puncture alluded to by his friend was made, and whatever issued—whether serum, serum and blood, or blood—she soon began to pant, and within a few minutes was down on her side, gasping for breath. The wound was plugged and ligatured, and he ordered a dose of brandy immediately; but she died on the fifth day, though at one time they entertained hopes of her recovery.

Within the right auricle of the heart was a white fibrinous clot, weighing one pound one ounce, and proceeding from it moulds of the large blood-vessels. This clot Mr. Storrar had omitted to mention. The blood-vessels about the abdomen also contained shreds of white fibrine, which, Mr. Storrar remarked, as he gathered them on the point of his knife, were like worms. He (Mr. Hill) was of opinion that the mare had died from excessive internal hæmorrhage, and that the *ante-mortem* clot in the heart was the immediate cause of death; for so soon as it filled the auricle and blocked up the valve, death would inevitably follow. There was an entire absence of blood in the system, but floating about amongst the intestines were large clots of blood.

He considered that the swelling was œdematous and due to debility, and that there was no rupture of the muscles when the first swellings appeared in the flanks. Besides, the swelling was considerably in front of the flank, and towards the median line (it was here illustrated by Mr. Hill on the black-board) when scarified; and this, with the fact that similar swellings occurred at the elbow in the first instance, before these appeared, convinced him that no rupture existed. Mr. Hill said that there was no rupture of muscular tissue until about an hour before death, when she became very restless, and threw herself down on her bed with great violence, falling flat on the abdomen. Had the rupture taken place before this date, there would have been inflammation of the peritoneum and muscles, also strangulation of intestine and discoloration; whereas, in the *post-mortem* examination, not one of these symptoms was present, neither did the mare at any time exhibit abdominal pain. Immediately before death she was taken in labour, and had she lived another hour, would undoubtedly have aborted.

There was also hepatisation of the right lung, for which treatment, at one stage of the case, was adopted. This Mr. Storrar had likewise omitted to mention.

Dr. GREENWAY considered that the immediate cause of death was Anæmia of the brain ; of course the clots would be the means of shutting off the supply, and might in that sense be considered the cause of death. Speaking of the formation of clots, he said that in cases of sudden death the heart would be found empty, or nearly so. When death was less sudden, the heart would be found filled with dark-coloured clots, extending into the vessels. But when death was prolonged, as in this case, there would be white fibrinous clots in the heart, and moulds in the vessels leading from it. He was of opinion that the kidneys should have been examined in this case.

Mr. GREAVES was of opinion that the cause of death dated from the time that the accident to the muscles happened, which was at the first appearance of the swelling in the flanks.

He said, some fat horses faint before you can get two quarts of blood away from them.

He was therefore of opinion that, first, the rupture and escape of fluid, then the scarifying and further draining the system of blood and serum, brought on fatal syncope, which was the cause of death.

Mr. REYNOLDS said that animals fed for exhibition purposes had a tendency to the formation of fat in place of muscle. He was of opinion that in this case the abdominal muscles had become deficient in tone, and had partially ruptured at the first appearance of the swelling.

Mr. WELSBY, President, said that the mare, being a keen pasturer, having no work, and getting very little exercise, would have a decided tendency to produce fat at the expense of muscle. He concurred in the opinion that there must have been rupture of the muscles at the first appearance of the swelling, and that although the swelling was considerably in front of the flank, as pointed out by Mr. Hill, when it was lanced, still, he saw no objection in that, as the fluid would gravitate to the most dependent part.

Mr. ELAM said, in reference to the state of the lung mentioned by Mr. Hill as being an important factor in this case, that hepatisation of the lung could take place within a period of four days prior to death.

Mr. STORRAR in reply said : The important point for consideration was, did the cause of death commence at the *flanks* or at the *heart?* There was no indications of derangement of the heart's action when the swellings first appeared in the flanks. Besides, there was no filling of the extremities, effusion into the chest, or between the fore legs, as we generally find associated with Heart Disease, or in œdematous swellings arising from debility.

There was no indication, either, of anything being wrong with the chest until after we had been treating her for several days. The hot fomentations, in his (Mr. Storrar's) opinion, relaxed the tissues more and more, and consequently increased the effusion which led to internal congestion. There was tenderness of the throat observed the first day, followed by disease of the chest the second day.

There is no doubt that her violent action immediately previous to death greatly aggravated the lacerated condition of the abdominal muscles. But taking all the symptoms into consideration, and the order of their development, he could not help arriving at the conclusion that the cause of death commenced by rupture of the abdominal muscles, and that the clots in the heart did not exist for any length of time prior to death.

Mr. TOM TAYLOR exhibited a beautiful specimen of a brain taken from a horse which had an acute attack of Apoplexy.

The history of the case is briefly as follows :—

I (Mr. Taylor) was called to see a horse said to be suffering from disease of the kidneys. I found him suffering from brain pressure. There was the characteristic slow pulse, thirty-six per min. He was about thirty years old, and had been blind for five years. I got him led with difficulty to my

infirmary. Administered a large dose of physic, and applied cold water to the brain. The bowels acted well in two days, after which I blistered him on the poll; but he made no improvement, and I had him killed by cutting the carotid artery. I had the brain carefully removed, taking off the base of the skull first, which I consider a preferable mode to the usual plan of taking off the top first.

The following is a description of the brain :—

The brain itself was healthy, so also the main blood-vessels. The dura mater, however, showed, on the right side of the basal portion, considerable thickening, and in some parts a calcareous condition; these results being probably due to Pachymeningitis. The thickened area corresponded to the posterior part of the frontal lobe and a small portion of the temporo-sphenoidal lobe, on the under surface of the right cerebral hemisphere, and extended inwards over the pituitary body and optic chiasma; it encroached but slightly to the left of the middle line.

In the midst of the thickened dura mater, and apparently between its outer and inner layers, an effusion of blood from one of the meningeal vessels had given rise to a large clot, which measured one and a half inches from before backwards, and one and a quarter inches at its widest part.

The clot was of tolerably recent formation, and showed, under the microscope, blood-corpuscles and debris, without any crystals of hæmatoidine such as are found in old apoplectic extravasations.

The subject of the election of representatives to the Council of the R.C.V.S. was then discussed, and the Secretary was requested to communicate with the other V.M. Associations, to ascertain their opinions on the matter, so as, if possible, to secure unity of thought and action.

The following gentlemen were then unanimously elected officers of the Association for the ensuing year :—

Mr. C. W. Elam, President; Messrs. W. Woods, James Storrar, and James Welsby, Vice-Presidents; Mr. George Morgan, Treasurer; D. Hutcheon, re-elected Secretary.

A cordial vote of thanks to the retiring President, Mr. Welsby, which was carried by acclamation, closed the meeting.

DUNCAN HUTCHEON, *Hon. Sec.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held in the Douglas Hotel, Newcastle-on-Tyne, on Friday, November 28th, 1879; Mr. D. Dudgeon, the President, in the chair.

The minutes of the preceding meeting were read and confirmed.

A letter was read from Mr. D. Hutcheon, secretary of the Liverpool Veterinary Medical Association, the consideration of which was postponed until the next meeting.

Mr. MULVEY related the history of a very interesting case of "Spinitis," the subject being in the owner's possession a week, when he became ill. Mr. Mulvey attributed the case to the animal having been recently docked, the tail being excessively seared, and being driven a long distance. The case was improving, and Mr. Mulvey did not despair of it making a good recovery with a long rest. After hearing the remarks of several members on the above case, the President called on Mr. Mulvey to read his paper on "Injuries to the Coronet and Feet."

Mr. MULVEY said: In fulfilment of the promise given at our last meeting, it becomes my duty to introduce a subject for your discussion this evening, and although I had a certain amount of diffidence in doing so, yet having an

earnest wish for the prosperity and firm establishment of this Association, I considered that it was the duty of every individual member to do all in his power to promote its welfare, and therefore I come before you to make a few observations on "Injuries to the Coronet and Feet." Injuries to the feet of the horse I need not tell you are amongst the most intricate and difficult cases, and yet are the most frequent with which we, as veterinary surgeons, have to contend. The foot of the horse is made up of an internal vital portion enclosed in horny structure, and it is on this account that the difficulty arises. Inside a horny box we have highly-organized structures, so that anything which perforates this box and injures ever so slightly the vital structures it contains, often produces results the most serious. I purpose first calling your attention to injuries to the coronet; these may arise from various causes: the most frequent are treads, overreach, and in collieries and on railways, from the wheel of a truck or tub running over the coronet, and in the hind feet; in some instances from striking the coronet against the sleepers, and in others from the habit acquired by many ponies and horses of sliding down the inclines. In this manner the coronet or a portion of the hoof is often scrubbed, and sometimes cut completely through by a jagged rail. Another cause of injury is by the foot getting fast between the crossings or switches, the animal being thrown violently down, causing bruise to the coronet, and occasionally fracture of the os suffraginis or coronal process of the os pedis; secondly, injuries produced by pricks in shoeing, by nails, wire, or other sharp substances being trod upon and perforating the sole, and by bad shoeing producing corns.

A tread is a contused wound on the inside of either hind foot, caused by one foot being brought forcibly upon the coronet of its fellow.

Overreach is a blow upon the heel of the coronet, produced by the hind foot overreaching the fore foot of the same side. These injuries may be more or less serious. In the majority of instances, simple bruise and abrasion of the skin of the coronet is all we have to contend with. In these cases the treatment I should adopt would be to remove with the scissors any skin that may be detached. Cleanse the wound and apply the following lotion:—

℞ Tr. Myrrh Comp. . . . . ʒij.
Sol. Zinc. Sulph. ad. . . . ʒviij.

This treatment, with a day or two's rest, will generally be found sufficient In other cases, a great amount of inflammation is induced in the parts by the force of the blow, often causing suppuration. Pus forms, which burrows downwards through the soft structures contained within the hoof, producing quittor; or when the injury happens to be in front of the coronet, open oint may be the result, or the skin of the coronet may already be in a diseased condition, the animal suffering from cracked or even greasy heels. The local irritation from this cause induces the animal to scratch and stamp upon the itching coronet, and being shod, as most cart-horses are, with high calkins to the shoes, the probability is that serious injury to the coronet is the result. I cannot better illustrate this than by relating to you the history of a case of the kind which has lately come under my notice. The subject was a grey waggon-horse, five years old, seventeen hands high. My attention was called to him by the driver informing me that the horse was continually stamping in the stable, and that there was a discharge from the coronets. On examining them I found that there was an eruption of a carbuncular nature, some of which had burst and were discharging copiously; others had not yet come to maturity. I ordered the mixed feed (which consisted of maize, peas, oats, and chopped hay) to be taken from him, and gave soft food, and a dose of aperient medicine; and after cleansing the wounds, had them dressed with carbolic acid liniment, at the same time left instructions for the shoes, which

had very high calkins, to be removed. This undoubtedly was not at once carried out, and during the day the animal struck the off coronet with such force with one of the calkins of the opposite shoe as to break the skin and make a very ugly wound, which induced so much pain and inflammation in the foot as to bring on a high state of irritative fever. The symptoms, when I next saw him, were pulse between seventy and eighty, breathing hurried, leg continually drawn up under the body; animal frequently lying down and moaning, then jumping up again as though the pain was beyond endurance, and I have no doubt it was. I at once had the shoes off, slightly thinned the soles, placed the off hind foot in warm water for a time, then dressed with solution of Liq. Plumbi. and solution of the extract of Belladonna, and afterwards put the foot in a large bran poultice, and gave three times a day the following mixture :—

℞ Spts. Æth. Nit.	ʒip.
Liq. Ammon. Acet.	ʒip.
Tr. Acon. Flem.	ɱxv.

I continued this treatment for three or four days, and still the animal was suffering great pain, although not quite so acute. I now began to find the discharge had mixed with it what was very like synovia. I then changed the treatment, and applied flannel swabs around the coronet, keeping them continually wet with cold water, and applied all over the coronet two or three times a day solution of Zinc. Sulph. At the end of about ten days the coronet was still enlarging, and the animal suffering almost as much pain as ever, the foot never being near the ground. I now thought I would examine the sole again, and had it completely removed. Finding that the pus had gravitated till the whole of the sole was hollow, and that a large sinus extended completely through the foot into the navicular joint, and from which there was a copious discharge of synovia, I then tacked a flat shoe on the foot with two or three nails, so as to be able to confine the dressing, and injected just within the wound, from the bottom, a weak solution of Hyd. Chlor., and applied a smart blister to the coronet; but do what I would—and I think I tried almost everything—all was of no avail. No sooner did one sinus seem to heal up than another broke out, and finding that the discharge was now mixed with blood and was becoming fœtid, I concluded that the case was hopeless, and therefore had him destroyed, and have brought the bones of the foot for your examination. From their appearance you will see how utterly without hope the case was, as the os coronæ, os naviculare, and os pedis are all involved in disease; ulceration of the whole of the articular surfaces; and in the case of the os coronæ the ulceration extends to both sides, and a large amount of morbid bone has been thrown out. The coronal process of the os pedis has completely disappeared, and from the appearance of this portion of the bone I am somewhat inclined to think that it was here the mischief first commenced, perhaps by fracture.

I now want to draw your attention to those injuries which I find so frequently occurring in colliery practice, viz., the wall of the foot being cut through by a jagged rail, or by the wheel of a tub or waggon running over the foot. These injuries, if attended to at once, are not so difficult to treat as would at first sight appear. I first have the part thoroughly cleansed from all grit and dirt, then, with the rasp or knife, remove the sharp edges of the horn, which will be found to be pressing upon the inflamed and swollen sensitive laminæ beneath, endeavouring to round the edges and removing any horn that may be loose or detached. Then immerse the foot in a pail of warm water and apply a good bran poultice, frequently renewed after a day or two. I remove the poultice and apply to the wound a salve composed of tar and lard melted together, to which I add, when cold, sulphate of zinc ʒj.

to ʒj. This ointment is applied on tow, and maintained in position by continuous folds or wrappings of tarred cord. I generally find these cases do well, but every now and then the horse or pony so injured is worked on for days before anything is said about his being lame. Grit and dirt works into the wound, the horn on the inside quarter, where the injuries generally occur, becomes softened, a disagreeable ichorous discharge squeezes out of the wound, and the animal is very lame. In this state of affairs I often find it necessary to remove almost the whole of the quarter, and sometimes a portion of the sole, when, after immersing the foot in warm water for a time, I place on the foot a round or bar shoe, seating it so that there shall be no pressure on the injured side, and dress over the parts either with Antimon. Chlor. or Acid Nit., then apply tow over all the exposed surface, and tie the foot loosely up. After a day or two remove the dressing and apply daily the Ung. Zinci Sulph. Co. I have frequently found in these cases that a portion of the os pedis has been injured, or necrosis takes place as the result of the injury; and in many cases I have removed large portions of the bone which have become detached, and after scraping away any spiculæ that may remain, and dressing in the manner mentioned, the cases have done well. Occasionally we come across cases where a waggon-wheel has run over the front of the foot, not cutting the horn, but crushing and bruising the parts beneath. In these cases the animal suffers great pain; the limb is continually drawn up under the body, the animal flinches on the least pressure to the foot, the laminæ are generally so much injured that extravasation of blood takes place, and the consequent swelling of the soft structures contained within the unyielding hoof necessarily causes the most excruciating pain. Recently I have had a very severe case of this kind, in which, after some days had elapsed, pus formed and made its way out at the coronet, although I had before removed a portion of the sole, finding that it was partly underrun. I now passed the probe upwards, and discovered that a portion of the os pedis was exfoliating immediately in front and about an inch below the coronal process. I thereupon removed the horn from the wall to within half an inch of the coronet, and with the forceps took away about half an inch of the pedal bone. After dressing with a solution of carbolic acid and Tinct. Myrrh. Co., and placing pledgets of tow over all, I had affixed to the foot a shoe having a clip at each side of the toe; and although for a time I was troubled with luxuriant growths from the exposed laminæ, which had to be kept down by application of Antim. Sesq. chlor. and pressure, the case has progressed satisfactorily.

Corns—bruise of the inner angle of the sole of the foot between the wall and bars, more often on the inside and almost always confined to the fore feet, due to undue pressure on the heels generally caused by the shoe, but may arise from other causes, as by a stone becoming fast between the shoe and frog, the pressure causing bruise and rupture of small blood-vessels, and consequent extravasation of blood, which percolates through the fibres of the horn. Should the bruise be severe and the cause not removed, or the injury not attended to, suppuration is the result, pus forms, and unless an outlet is given to it by the removal of the horn, it burrows upwards through the soft structures and makes its exit at the coronet. The more simple cases of bruise to the foot, called corn, are easily got rid of by removing the cause and poulticing the foot for a short time, should the cause, as is too often the case, be the result of a wrong system of shoeing, viz., the shoe being seated or bevelled on all the sole surface, except where it comes in contact with the heels. Thus you will find that the only bearing the sole obtains is at its weakest part, viz., the heels, the wall of the foot carrying all the rest. This unequal pressure is, in my opinion, the most frequent cause of corn. The treatment of those cases of corn in which suppuration has taken place is often very troublesome. I commence by removing all the underrun por-

tions of the sole, and ascertain by means of the probe to what extent the internal structures are involved. In many cases I find that the quickest treatment consists in inserting a seton through the sole and bringing it out in the heel, thus giving a free exit to any pus that may have formed, and producing, by the stimulus of the seton, a healthy state of the parts. After keeping the seton in the wound for a week or ten days, during which time I should have it dressed daily with stimulating digestive ointment, I remove it and have the parts syringed every day with solution of Zinc. Sulph., and place on the foot a round or bar shoe.

Amongst the most frequent cases of injury to the sole of the foot are those caused by pricks in shoeing. These injuries are often difficult to discover, especially when the nail has been drawn by the smith, and a fresh one inserted. I am always most careful to examine the nail-holes in every case where there is the least doubt as to the seat of lameness, even if the lameness is said to have come on suddenly, and the horse has not been shod for two or three weeks; for over and over again have I found on examining the foot in these cases that a nail has penetrated, perhaps very slightly, through the horn, and the animal may evince very little pain or lameness for a considerable time, when suddenly he is noticed to be lame, and on removing the shoe and examining the foot I have found a great portion of the sole underrun. Occasionally lameness may arise from the nails being too close to the laminæ, although not actually through the horn, yet so nearly as to press upon and bruise the sensitive parts, and if not removed speedily produce so much inflammation that pus forms, and being absorbable, it diffuses itself beneath the horn in every direction; in other cases the nail may have been driven in with such force as to penetrate, and even fracture the os pedis. Only the other day my attention was drawn to a pony in one of the collieries in which, in shoeing, a nail had taken the wrong direction. The smith, by some means or other, had not noticed the animal to show any pain or lameness at the time; nearly a week elapsed, when the pony was found to be very lame. The shoe was removed, the foot examined without result; next day matter was observed to be oozing from the coronet, the horn separating at its junction with the hair. It was then my attention was called to the case. I immediately had the foot thoroughly searched, and soon found that the whole of the quarter was underrun, and on passing the probe detected fracture of the wing of the os pedis. I then ordered the pony to bank into hospital, removed the whole of the horn from the outside quarter of the foot, then with the forceps took away perhaps three-quarters of an inch of the os pedis. After cleaning the wound and dressing with carbolic acid liniment, and covering over all with tow and bandage, the case has done well.

In addition to injury from pricks in shoeing, the sole of the foot is peculiarly liable to injury from being brought forcibly in contact with sharp substances left carelessly about on roads, such as nails, glass, wire, etc., etc. The successful treatment of injuries caused in this manner depends to a great extent upon the part of the sole perforated. Not long since I was looking over the ponies in a colliery, when on making one that had just come from work stand over in the stable, I noticed that he was very lame, and on running my hand down the leg and around the coronet to ascertain the cause, my hand came in contact with something protruding above the heel, and on picking up the foot I found that a lamp nail, some four inches in length, had passed completely through the foot, going in at the outer angle of the sole and coming out in the heel. It took all the force we could exert to draw it out with the pincers; of course, a considerable quantity of blood followed its withdrawal. All the treatment adopted was to foment and poultice for a day or two, and in the course of a week he was again at work, apparently very little worse. But how different is the result if the nail, be it only a small one—and small

ones, I find, generally do the most harm—happens to have perforated anywhere about the point of the frog, probably injuring the tendon of the flexor pedis, and resulting in open joint, and perhaps Tetanus; in these cases the pain is often so acute that sympathetic fever, and even death is the result. Of course, our first care must be to alleviate the constitutional symptoms. I generally give, in the first place, a dose of purgative medicine, and then administer, three or four times a day, the fever mixture as mentioned in the early part of this paper. I have the sole thinned till it gives to pressure, and apply warm fomentations and soothing applications to the wound, as solution of Liquor Plumbi, or cover the wound with powdered camphor or extract of belladonna, and put the foot into a good warm bran poultice. It too often happens in these cases that the nail has perforated either into the joint, or so near that from the amount of inflammation set up the joint becomes opened. When the injury is of such a character as this, the case generally terminates fatally. I have had very many such cases, and with varying success in treatment; I have tried almost everything in its turn. Should the coffin joint be open and a large discharge of synovia, I have sometimes used a single injection of solution of Hyd. Chlor. ʒj. to ʒj., or tincture of iron just within the wound; at other times, and I think with the most success, I have injected Liquor Plumbi pure, then applied externally, on a large pledget of tow, a powder consisting of Pulv. Alum, Pulv. Aloes, and flour, and left it for a day or two, keeping the foot as perfectly at rest as is possible, and had cold wet flannel bandages applied to the coronet. In other cases I have applied a good smart blister to the coronet, but it too often happens when the injury is of the serious nature I have described, that do what we will, the animal succumbs. Should, however, the discharge of synovia be arrested, the animal not suffering so much pain and making a little use of the foot, then we have good ground for hope. I should now commence to dress the wound—Ung. Zinci Sul. Co. applied on good pledgets of tow, and stimulate the coronet with repeated mild blisters, and after a short time has elapsed, turn the animal out to grass, the walking about and using the foot often being of great service.

And now, gentleman, in conclusion I must thank you for the patient hearing you have given me. Very imperfectly I have endeavoured to place before you a brief outline of some few of the various injuries to the feet which are daily brought under our notice. I am not presumptuous enough to suppose that I have told you anything but what you were already acquainted with, but I do hope that the observations I have made, crude though I know they are, may be the means of eliciting the opinions of all here, and that the discussion which will ensue may tend to a further knowledge of the subject, remembering the words of the wise man, "In the multitude of counsellors there is wisdom."

A discussion followed the reading of this paper, in which all the members present took part, and the further discussion on it was adjourned until next meeting.

G. R. DUDGEON, *Hon. Sec.*

SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held on 10th December, in the London Hotel, Edinburgh.

Mr. Rutherford, Edinburgh, presided. The office-bearers for the ensuing year were elected as follows:—Mr. Connochie, Selkirk, President; Messrs. Aitken, Borthwick, and Young, Vice-Presidents. The present Secretary was re-elected.

The PRESIDENT gave notice that at next meeting he would move for the appointment of a visiting Committee to wait personally on members of the

Association, and other veterinary surgeons within a reasonable distance of Edinburgh, with a view to inducing them to do all in their power, by regular attendance and otherwise, to contribute to the well-being of the Society.

The SECRETARY read a communication which he had received from the Secretary of the Liverpool Veterinary Medical Association, requesting the members to consider a resolution passed at a recent meeting of that Society. The resolution was to the effect "that the members of the Liverpool Veterinary Medical Association were not prepared to submit to the profession the name of any gentleman as a substitute for any of those gentlemen who retire by rotation in May, 1880, from the Council of the Royal College of Veterinary Surgeons."

Some discussion on this subject ensued, and the members were unanimously of the opinion that while some of the gentlemen referred to in the above resolution deserved their support, the Association should take steps to secure the better representation of the Scottish section of the profession. The Secretary was desired to thank the Secretary of the Liverpool Veterinary Medical Association for his communication, and to reply to this effect.

Mr. RUTHERFORD, Mr. BORTHWICK, and the SECRETARY were appointed a committee to issue circulars to the holders of the veterinary certificate of the Highland and Agricultural Society, pointing out the advisability of at once obtaining the diploma of the Royal College of Veterinary Surgeons, as a means of qualifying themselves to vote at the next election for members of Council.

Mr. RUTHERFORD exhibited a patent composite horse-shoe. This was of a material which somewhat resembled gutta-percha. It had been made and patented at considerable expense, and was stated to be very durable, besides having other advantages. It was fixed to the hoof, not in the ordinary manner, but by means of screw nails. He had caused the shoes to be worn on horses doing only half-work, and found that they did not last more than three days.

Professor WALLEY showed the œsophagus of a three-year-old cart colt, which was immensely dilated. The case occurred in the practice of Messrs. Corbett and Pringle, Newcastle, the animal having been purchased by the owner the day prior to death, and turned into a grass park for the night. When seen by Messrs. Corbett and Pringle, he was in a desperate condition, breathing with great difficulty, coughing violently, and discharging large quantities of saliva from the mouth. These gentlemen diagnosed dilatation and impaction of the œsophagus, and prognosticated a speedily fatal termination of the case. The prognosis was shortly verified. The œsophagus, trachea, larynx, and a small portion of lung were sent to Professor Walley for inspection. The gullet was immensely dilated throughout. At its most dilated part its circumference was fourteen inches. The muscular layer was hypertrophied to the extent of half-an-inch, but otherwise it was healthy. No stricture or organic disease existed either in the gullet or cardiac orifice of the stomach. The left laryngeal muscles were atrophied, and the laryngeal and tracheal mucous membranes inflamed. Both larynx and trachea were filled with a frothy fluid mixed with ingesta. The small portion of attached lung showed considerable carnification.

The difficult question to solve in the case was the cause of the dilatation, as no mechanical obstruction to the passage of ingesta existed. Death had evidently been caused by asphyxia, as the result of the passage of ingesta into the bronchial tubes, probably in the act of vomition.

Professor WALLEY also exhibited the bones of the hock and fetlock of a cow, showing the results of diffuse metatarsal Periostitis.

Subject.—A small Ayrshire cow, aged.

History.—His attention had been directed to the animal during his

course of inspection of dairies, about six weeks prior to death, when she was in slings, and under the care of Mr. Rutherford. He had then observed that the leg was enormously swollen, and that two or three fistulous openings existed in the fetlock and hock joints respectively. A discharge of pus similar to that usually found in sinuses, issued from the openings, and there was evidence, in the shape of cicatrices, of others having existed. The animal was in low condition, but was eating and giving a tolerable quantity of milk. There were no signs of organic disease of internal organs; nevertheless, he had a strong suspicion that the disease had a tuberculous origin.

After the death of the animal, Mr. Rutherford afforded him the opportunity of examining the leg. The skin and subcutaneous tissues were thickened to the extent of from one to two or three inches. The external fistulous openings of the hocks corresponded to cloacæ in the joints, from the orifices of which masses of degenerated ligamentous structure protruded.

The whole of the soft structures of the fetlock joint had undergone molecular degeneration, and large portions had been cast off through the fistulous openings, the extremities of the bones entering into its composition being eroded from absorption, entirely deprived of periosteum, and absolutely dead. The ligaments of the corono-suffraginal and corono-pedal articulations, with the tendons clothing them, were undergoing gelatinous degeneration. After removal of the soft structures by boiling, extensive destruction by caries of the articular surfaces of all the tarsal bones was seen to have taken place, large quantities of new ossific matter having been thrown out round the joint and all round the upper three-fourths of the metatarsal bone, the latter being completely encased. No trace of tubercle existed in any of the diseased tissues, and he was of opinion that the affection was local in its origin.

A short discussion afterwards ensued on the subject of the paper read by Professor Walley at the previous meeting.

JOHN MCFADYEAN, *Secretary.*

ONTARIO VETERINARY COLLEGE MEDICAL SOCIETY, TORONTO, ONTARIO.

THIS Society, which has been organised for some time in connection with the College, having for its object the discussion of subjects pertaining to the veterinary profession, held its first weekly meeting for the session of 1879-80, on the 9th of November, in the lecture-room. Sixty-seven members were enrolled. The Chairman, Professor A. Smith, President of the College, in his introductory remarks, dwelt chiefly upon the benefit to be derived from this Society, and the good feelings that had in previous sessions existed among the students in the discussion of their various subjects. The following gentlemen were then elected officers for the session:—Mr. J. P. Whitehead, Delaware, Ontario, Secretary; Mr. B. B. Page, Chicago, Illinois, Treasurer; Mr. R. Riddell, Cobourg, Ontario, Librarian; Mr. G. Dunphy, Ingersoll, Ontario, Assistant Librarian. Since that time regular weekly meetings have been held, at which an essay and two communications on diseases and treatment of domesticated animals have been read. Among the papers may be noted that of Mr. J. Loughman, Montreal, on a case of Navicula-arthritis; Mr. S. Brenton, Belleville, Ontario, on severe puncture of thoracic wall; Mr. F. Groff, Ohio, United States, on Hernia; Mr. T. Meredith, New York, United States, on amputation of tongue; Mr. J. Johnston, Teeswater, Ontario, on Parturient Apoplexy; and Mr. G. A. Dallimore, Minnes., United States, on Embolism. These and numerous other subjects were warmly discussed by the students, from which they derived great benefit, especially those of the junior class. Another feature of importance in con-

nection with this Society, and one from which the students, derive special benefit, is the remarks made by the President before the close of each meeting, upon the subjects discussed. J. P. WHITEHEAD, *Secretary.*

THE MONTREAL VETERINARY ASSOCIATION.

THIS Association met on December 4th, the President, Dr. Osler, in the chair. Mr. J. B. Green described a very interesting case of Necrosis of the upper jaw of a horse, resulting from the fracture of a molar by an ignorant quack, in attempting to knock out the wolf teeth. Mr. Green deserves considerable credit in his treatment of the case, as it was necessary to trephine the superior maxillary at the side of the face in order to remove the diseased bone, an operation not unattended with danger; this, however, he avoided, and now the owner rejoices in the possession of a healthy animal, fully recovered from a disease that had baffled the skill of all the local empirics.

Mr. WM. MCEACHRAN read an exhaustive paper on Pulmonary Tuberculosis in cattle, going fully into the cause, symptoms, and pathology of this now unfortunately too common disease. Among the more prominent causes he cited the pernicious custom practised by many breeders, particularly of shorthorns, that of in-and-in breeding. Another cause was confining cows in poorly-ventilated stables, and giving them food that would produce a great flow of milk, but at the expense of the animal—anything, in fact, that tended to lower the vital powers would, he said, if it did not actually cause the disease, render the animal more susceptible to it, and as it was notoriously hereditary, unless proper care was taken it would soon reach such proportions as to make further trifling with it a serious mistake. One question on which he dwelt at considerable length was, whether the disease was communicable to man by eating the flesh of or drinking the milk from affected animals. The great increase of late both of Tuberculosis in cattle and the same affection in man, in its most common form of Pulmonary Phthisis or Consumption, may and probably do have some connection. That the ingestion of the actual tuberculous matter does produce Tuberculosis has been abundantly demonstrated, but whether the milk from tuberculosed animals has the same effect the writer was not prepared to decide. The evidence was not as yet sufficiently conclusive, but was enough to warrant more care than is now exercised in ascertaining the health of our food supply.

The CHAIRMAN fully agreed with Mr. McEachran as to the infectiousness of the disease, and recommended better supervision of the meat and dairies of large cities.

The SECRETARY read a letter from Dr. C. C. Lyford, describing a peculiar case in a cow that had been bitten by a dog supposed to be suffering from Rabies.

After a vote of thanks to Dr. Lyford and the essayists, the meeting adjourned.

NEW MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

THE following candidates, holding the Highland and Agricultural Society's Certificate, have obtained the Diploma of the Royal College of Veterinary Surgeons —

Anderson, William, Alford, Aberdeenshire	...	...	1867.
Beattie, Peter, Bogfern, Turriff, Aberdeenshire	...	...	1867.
Breakell, George, Garstang, Lancashire	...	...	1854.
Brown, John, Roxburgh, W. Calder, Edinburgh	...	...	1859.

Carrie, John, Westerton, Fyvie, Aberdeenshire ... ... 1861.
Cooper, John, Fordyce, Banffshire ... ... 1871.
Connochie, John Dixon, Selkirk ... ... 1858.
Dalling, Thomas, Whiteside, Edinburgh ... ... 1874.
Dollar, Thomas Aitken, London ... ... 1851.
Dun, Finlay, London ... ... 1849.
Farquhar, William, Shawstonhead, Ayrshire... ... ... 1848.
Ferris, John, Brechin, S. Wales ... ... 1856.
Fingzies, James, Lochgilly, Fifeshire ... ... 1860.
Frater, William, Lesmahague, Lanarkshire ... ... 1864.
Fraser, Alexander, Earlsfield, Kennethmont, Aberdeenshire 1856.
Gibson, Alexander, Millbre Fyvie, Aberdeen... ... ... 1868.
Gunn, Alexander, Balloan, Beauly, Inverness-shire ... ... 1875.
Hepburn, John, Milnathort, Kinross-shire ... ... 1850.
Hutton, John, Kelso, Roxburghshire ... ... 1874.
Ironside, John Matthew, Milltown, Rothiemay ... ... 1872.
Kay, Thomas, Ardwick Green, Manchester ... ... 1871.
Lawton, Peter, Alderley, Chelford. ... ... 1862.
Macintosh, Robert, Falkirk ... ... 1855.
McLean Lachlan, Brooklyn, U.S. ... ... 1854.
McEwen, John, Killin, Perthshire ... ... 1867.
Margarson, Edward, Stoke Ferry, Norfolk ... ... 1874.
Meiklam, Robert, Drumry, E. Kilpatrick ... ... 1866.
Merry, Charles, Irvine ... ... 1863.
Millar, David, Alyth, Perthshire ... ... 1877.
Mitchell, Robert, Glasgow ... ... 1859.
Nimmo, Andrew, Linlithgow ... ... 1850.
Miller, William, Bradninch, Collumpton, Devon ... ... 1853.
Perry, Edward, Ibstock, Leicestershire ... ... 1865.
Philip, George, St. Andrews, Fife ... ... 1872.
Reid, Robert, Leith, Edinburgh ... ... 1860.
Seed, Samuel, Keighley... ... ... 1875.
Schofield, John, Pontefract ... ... 1857.
Simon, John, Forgue by Huntly ... ... 1866.
Smith, William, Tranent, Haddingtonshire ... ... 1852.
Summers, William, Sidmouth, Devon... ... ... 1866.
Tallontire, John, Skelton, Cumberland ... ... 1863.
Tait, George, Elgin ... ... 1848.
Wright, William, Tideswell, Derbyshire ... ... 1857.
Tait, Joseph, Turriff ... ... 1861.
Young, John, East Calder ... ... 1870.

At the meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held January 5th and 6th, the following students from the Royal Veterinary College were admitted members of the Profession :—

Mr. William Hastings Farrow ... London.
„ William John Payton Tibbatts . Harborne, Birmingham.
„ Frank Taylor ... ... Cradley Heath, Staffordshire.
„ William John Malvern ... ... Cheltenham.
„ Frederic Gowland Rugg ... Wye, Kent.
„ Nicholson Almond ... ... Great Clacton, Colchester.
„ Henry Augustus Rumboll ... Bristol.
„ George Rees ... ... Llanboide, Carmarthenshire.
„ Henry Keyes ... ... Neale Co. Mayo.
„ James Bayes ... ... Kettering, Northamptonshire.

Messrs. Malvern, Rugg, Almond and Rumboll passed with great credit.

The following students of the same College passed their "Second Examination" on January 7th and 8th.

Mr. Robert Joseph Dawson.
„ Edward Harry Wand.
„ Alfred John Down.
„ Charles Samuel Hunting.
„ Edward Charles Whisken.
„ Ernest Emelius Bennett.
Mr. Edward Arthur Hollingham.
„ Edward Langford.
„ Francis William Sharp.
„ Arthur John Blake.
„ Arthur Rogerson.
„ Stephen Edward Holmans.
Mr. John Kirby Pilkington.

Messrs. Dawson, Wand, Hunting, Bennett, Hollingham, Rogerson, and Pilkington, passed with great credit.

The following students of the same College passed their "First Examination" on January 9th and 10th :—

Mr. David Martin Barry.
„ Frank Joslen.
„ Frank James Peck.
„ Frederick Henry Pinkett.
„ Edward James Sewell.
„ William Henry Bartrum.
„ William Thomson Yeates.
Mr. Phillip Turner.
„ Edward James Mellett.
„ Thomas Down.
„ Herbert Pollard.
„ Alexander Henry Waddell.
„ Joseph Henry Chaplin.
„ Charles Hartley.
Mr. Francis Morton Wallis.

Messrs. Peck, Sewell, Bartrum, Down, and Hartley, passed with great credit.

At a meeting of the Scottish section of the Court of Examiners, held in Edinburgh, January 22nd, the following students passed their "first examination":—

Edinburgh Veterinary College.

Mr. James Pou.
Mr. James Geo. O'Donel.

Edinburgh New Veterinary College.

Mr. Wm. Malcolm Lyon.
„ Frederick Jones.
Mr. Wm. Smith King.
„ Peter Dalling.

Glasgow Veterinary College.

Mr. Robert Yates.

Messrs. O'Donel and Jones passed with "great credit."

Jurisprudence.

[We commend the following case to those members of the profession who oppose the obtainment of a penal enactment for the protection of veterinary surgeons and the public from impostors, and leave practitioners to struggle as best they can against more than one kind of "honest" competition.]

ALLEGED BREACH OF WARRANTY.

At the Wellingborough County Court, on Nov. 17th, Mr. Hollis, of Wellingborough, baker, brought an action against Francis Baxter, of 4, Furnace Street, Wellingborough, veterinary surgeon, to recover £19 10s., for breach of warranty on exchange of a horse, and damages sustained by him "in consequence of defendant's having fraudulently represented as sound, a good worker, and only five years old, a horse which he well knew to be unsound

and aged, and thereby obtained from him a pony worth £12, and the sum of £7 10s."—Mr. Heygate for the plaintiff, and Mr. Parker for the defendant.—Plaintiff stated that he was a young man, and assisted his mother in the business of a baker. On the 15th October last he had a pony, which he had been in the habit of driving for about three years. Defendant came to him and proposed that he should exchange his (plaintiff's) pony for one he had. Defendant said he had got a good pony, which he thought would suit him (plaintiff). Defendant said it was five years old. He asked plaintiff £9 in exchange, and eventually agreed to take £7 10s. Defendant gave a warranty to plaintiff that the pony was "sound, quiet, and a good worker." Defendant warranted the animal on the 15th, the same time as the money was paid. At the same time he said he would give plaintiff a written warranty. Plaintiff relied upon defendant's word as to the age of the pony. Took the pony away and tried him, but did not notice anything suspicious about him. His attention was called to something wrong with the pony shortly afterwards, and he had him examined on the 16th October (the next day) by Mr. B. B. Aris, a veterinary surgeon. Saw the defendant subsequently; told him that the pony was not what he represented, and read the veterinary surgeon's certificate to him.—Mr. Parker: We dispute that the warranty was given until after the sale, and that the animal is unsound now.—Plaintiff further said that on the 16th October he went to defendant's, and offered to take the £7 10s., and have his pony back. in the presence of witnesses, but defendant would not let him go.—By Mr. Parker: I am bringing the action for my mother. I am 17 years of age. I did not tell defendant I was of age. I did not tell him the business was mine. It was my mother's pony. I said I had driven him for three years, and all that was the matter with him was that he would not go occasionally. I told him the pony was not vicious, and that he did not kick. The bargain was struck in the morning, between twelve and one, and I took my pony and money, and brought his back. I had the written warranty at the time I brought the defendant's pony away.—James Brewster Cook, dairyman, Wellingborough, spoke to being present at an interview between the plaintiff and the defendant on the 16th October. He heard the plaintiff offer to take his pony back, but defendant would not hear of it, and said he would do nothing in the matter.—By Mr. Parker: Defendant stated that the pony had damaged his vehicle, and plaintiff said, with all his faults, he would like to have him back again. Defendant said he would do nothing, repeatedly. Never heard defendant say he wanted to be paid damages.—Mr. B. B. Aris, M.R.C.V.S., Wellingborough, testified to examining the animal on the 16th October. The certificate produced was the result of his examination. The mouth of the pony indicated age, and he was of opinion that he was from 12 to 14 years old. His flanks were working a good deal. He trotted him up and down the yard, and found that he was lame. The pony was suffering from Spavin on the fore hock, and was also unsound in his wind. His age was between 12 and 14 years, but he was bound to say that was more guesswork than anything else. No practised person could honestly say he believed the pony to be five years old. He estimated the value of the pony at £4 or £5.—His Honour: I think the real point is whether the pony was sound or unsound.—By Mr. Parker: The pony was trotted 40 or 50 yards. I could tell without his trotting that he was broken-winded, by the heaving of his flanks and by his respiration. I should think the disease of the hock was of twelve months' standing, or perhaps more.—Mr. Parker said the defence was mainly as to soundness or unsoundness, and he should call a disinterested veterinary surgeon to prove that the animal was sound.—His Honour: Cannot we select a third veterinary surgeon, to go with the two and examine him?—Mr. Heygate said he thought his cross-examination would put a different construction on the matter.—Mr. Parker: The warranty was

given afterwards. I say defendant did not warrant the horse. When plaintiff went back subsequently he said that, as he believed the horse to be sound, he would state in writing.—His Honour: It is a species of fraud, because it was written afterwards. I cannot allow you to stultify your client by saying that. All that you have to prove is, that the horse is "sound, quiet in harness, and a good worker." When a man goes and writes a paper, he does not write it as a sham.—Mr. Parker: It was not meant to be used in this case.—His Honour: He (defendant) wanted to assist plaintiff in trying to perpetrate a fraud upon some one else, or he perpetrated a fraud upon plaintiff himself.—Mr. Parker: Defendant believed the horse to be what he has written on the paper.—His Honour: You must stand or fall by it then.—Defendant said he was a veterinary surgeon, carrying on business at Wellingborough, and was a Fellow of the Royal College of Preceptors. He had had great experience in horses, both in England and America. On the 8th October he had the pony offered for sale by auction, but it was bought in at £15, the reserve price being £19. On the Wednesday following, defendant came to his house, and asked to see him (defendant). He saw plaintiff, who asked him whether he had sold his pony, and said that if the animal were not sold, he should like to look at him. He went to his stables, and turned the cob loose in the yard. Plaintiff said he thought it a cob that would suit him, and said he had one that would not go sometimes, but which was right in every other point. Plaintiff said he did not want to be told; he knew a good cob when he saw him. He examined the pony thoroughly, and on the Monday evening said he should like to see the pony in harness. On Tuesday he put the cob in harness, and drove to Wilby, and on the Wednesday they struck the bargain. On the previous Thursday he (defendant) drove the pony to Leicester and back. Plaintiff paid him £7 10s. for the pony, and he afterwards signed the document produced. On Thursday, the 16th, he met plaintiff in the street, and plaintiff said to him, "I do not like the looks of your cob. He is ever so old. A man told me so." Defendant replied, "I don't take notice of things like that. If you pay me the damage your cob has done—he kicked me out of the trap this morning at Bozeat—I will exchange." Plaintiff had said that his pony would not lift his leg at anything, and was perfectly quiet. There was nothing the matter with his (defendant's) pony's hocks when he sold him to plaintiff. He had seen him every day since. Had seen him galloping about the town with heavy loads. He met plaintiff coming down Wilby Road as hard as he could go. The pony was perfectly sound when he (defendant) examined him. He examined the animal that morning, and found him sound in the wind, but there was a rupture of the sheath of the back sinew, and that might be done in a minute. With about three days' rest, and proper cooling embrocations, he would be all right. Nothing would be likely to cause the injury more than putting him from light to heavy work.—By Mr. Heygate: I have been in Wellingborough five or six weeks, and come from Blaby, near Leicester. I will swear I am a member of the Royal College of Veterinary Surgeons. I do not know any Francis Baxter at Leicester. I read the *Veterinarian* sometimes. My name is Francis Baxter.—Mr. Heygate: Are you the person referred to in this number of the *Veterinarian* (produced) as Francis Baxter, junr., as to whom inquiries are made as to whether he is a member of the Royal College?—Defendant: Not that I know of. I am a member of the Royal College, that is sufficient for you.—By Mr. Heygate: I do not know Hohson or Sharp, of Leicester, veterinary surgeons,. I am a Fellow of the Royal College of Preceptors.—Mr. Heygate: What constitutes you a Fellow of that?—Defendant: By getting three certificates and passing three examinations in general knowledge.—Q.: Did you write that letter (produced)?—A.: I did.—Q.: Do you mean to say you wrote a letter of this kind? [Mr. Heygate here

explained that the letter stated that if he (Mr. Heygate) continued to circulate false reports he (defendant) would bring him up for "deformation of character."]—A.: I might have made a mistake.—Mr. Heygate said he should be glad if an adjournment were granted, in order that the truth might be arrived at.—His Honour: You are going to defame this man's character. You have done it pretty considerably already.—Mr. Heygate said the important point was, that if he was not a member of the Royal College, his evidence as to the condition of the animal would be of less value.—Defendant in further examination by Mr. Heygate, said he did not tell plaintiff that the horse which he had offered by auction had been sold to a Mr. Parker, and that the one which he had sold to him was two years younger. He did not say it was five years old.—Mr. W. R. Kitcher, veterinary surgeon, Kettering said he had practised as veterinary surgeon since 1849, but was not a member of the college. He saw the cob in dispute onthe 13th inst., when the plaintiff and the defendant were together. He examined the pony for Spavin, but did not find any, nor any symptoms of it. He felt the hocks. They were not heated, and there was no appearance of Spavin. He thought the cob perfectly sound barring a lameness behind, which he thought was temporary. It was a rupture of the sheath of the back sinew, and would be likely to be caused by heavy work. He examined the mouth, and there was no doubt that it was an aged pony. It was in good condition, with plenty of flesh. If a horse was worked with Spavin it generally got very poor.—His Honour (to Mr. Parker): You have established a sufficient case for a third veterinary surgeon to be called in.—His Honour ultimately decided that the surgeon to be called in should be Mr. Wiggins, M.R.C.V.S., Market Harborough, and that the point to be referred to him should be, whether, in his opinion, the pony was "sound, quiet, and a good worker" on the 15th of October, the damages to be according to particulars, and to be reduced to 1s. if the cob was returned to plaintiff, Mr. Wiggins to report also as to value.*

Obituary.

WE have to record the demise of a young member of the profession, Mr. H. A. W. Ferguson, son of Professor Ferguson of Dublin, and who only graduated in April, 1878. Mr. Ferguson was Government Veterinary Inspector at Ballina, Ireland. His death was very sudden, and in addition to his parents, he leaves a young wife to mourn his untimely end. The *Irish Times* says, "He was considered very skilful in his profession, had a large practice in an extensive district, and during his stay of over a year in Ballina was a general favourite with all who knew him."

Death has removed another graduate of the same year, Mr. Harry Lowe, of Norwich, who had been in failing health for some time, but whose premature decease must nevertheless be deplored.

Besides these losses, the profession is also deprived by death of Mr. Heaps, Preston, who graduated in 1859, and Mr. Mason, of London, who graduated in 1851; while from Melbourne, Australia, we hear of the decease of Mr. Charles Forbes, who obtained his diploma in 1841. A Melbourne paper says:—

"Mr. Forbes was well-known throughout the district, having been one of the early pioneers. After having been very successful in his gold exploits, he removed from Sandhurst to Ballarat, where he continued to reside until about

* We are informed that this M.R.C.V.S., F.R.C.P., and M.A. absconded on the conclusion of the case, taking the plaintiff's pony with him. It is also stated that Mr. Kitcher, *veterinary surgeon*, who had practised since 1849, was a few years ago a postmaster at a small village not far from Kettering.

six years ago, when he returned to this city, and has since been engaged as veterinary surgeon. He leaves a widow and two grown-up children. The deceased was a native of Aberdeen, Scotland, and fifty-nine years of age."

Army Veterinary Department.

Gazette, January 6th.

ROYAL ARTILLERY.—Veterinary Surgeon J. Gibbs retires upon temporary half-pay.

VETERINARY DEPARTMENT.—Veterinary Surgeon, First Class, M. F. Healy, from the Royal Artillery, to be Veterinary Surgeon, First Class.

WE have frequently alluded to the serious and lamentable losses among the transport animals in Afghanistan, due to mismanagement, ignorance of what is necessary in the organisation of this most essential portion of an army, but, most of all, the neglect of veterinary assistance. After almost irreparable loss has been incurred, the Indian Veterinary Department has at last been called in to aid the Government, and already the result of its intervention is most marked and salutary. The *Lahore Civil and Military Gazette* remarks on this in the following terms :—

"We are glad to hear that the Veterinary Department, on the lines of our communications in Afghanistan, is working admirably. There can be no doubt of the value of the services of the officers of this Department in the organisation and efficient maintenance of a transport train, and Sir M. Kennedy has expressed his acknowledgment of them. Arrangements are now made for the sending back of all animals unfit for work, and 400 have recently reached Peshawur from Cabul. Among these are thirty-seven elephants, eleven more having died on the march between Cabul and Gundamuck. Starvation is, in nine cases out of ten, the principal cause of the casualties among the baggage cattle, and we are exceedingly glad to understand that Government has ordered a committee to assemble, to investigate the circumstances of the extraordinary mortality which prevailed during the first campaign of the present war. The scheme of a really well-conducted transport service is a great one, and should be gone into fully, patiently, and with systematic care. In competent hands, we have no doubt that an extraordinary increase of efficiency, as well as a vast economy, could be effected. . . . . At the inspection, by Principal Veterinary Surgeon Collins, of the ponies sent up from Bombay, for transport purposes, to Jhelum, of a total number of 1,573, we are informed that 850 were pronounced to be good, 450 indifferent, 250 bad, and the remainder capable of carrying donkey-loads. Those returned as good were fit for immediate service; as indifferent, required time to recover; the bad included those which were quite unfit for transport purposes, either as over fifteen, or too young—under three, and those physically unable to carry loads. Over 200 animals were found to be suffering from Strangles, chiefly the young, many being yearlings. The total number of transport animals collected at Jhelum remained for some weeks about 7,000, the arrivals and departures balancing one another, at the rate of about 300 daily. The average number of sick was between 400 and 500, chiefly cases of Strangles. No Glanders appeared, though two ponies suspected to be diseased were destroyed."

Another most important step forward, is the promulgation by the Governor-General of India, of an Act to provide for the better prevention of Glanders and Farcy in that country. The strict enforcement of this Act—the necessity for which we have so urgently insisted upon—must diminish what was becoming a widespread calamity.

Notes and News.

HYDROPHOBIA IN DUMBARTONSHIRE, AND RABIES IN ROME.—The *Lancet* says that a remarkable state of matters is recorded from the Vale of Leven. A mad dog appeared in the district about a month ago, and bit a gamekeeper, who showed symptoms of Hydrophobia three weeks afterwards, and died in the Royal Infirmary of Glasgow, after four days' illness. A cow, bitten about the same time as the man, showed also symptoms of Rabies, and has had to be shot. Within the last few days six calves on the same farm have met with a similar fate. On the 10th January a rabid dog was found secreted on board one of the Loch Lomond steamers, and, after being dislodged from its hiding-place with much difficulty, was destroyed. The sheriff of the county has wisely ordered all dogs to be confined for the next two months.

Not very long ago, when several cases of Hydrophobia occurred in Glasgow, the existence of Rabies in Scotland was very much doubted, if not altogether denied. Now the west of Scotland is becoming nearly as seriously visited as some parts of England.

Rabies has broken out in the Roman Hunt Kennels, and we learn that the whole of the hounds have had to be put down on account of the outbreak. The disease has assumed chiefly the dumb form, and the first hounds that suffered were part of sixteen couple sent out to Rome in September last, and which were believed to have carried the disease with them.

VITALITY OF BACTERIDIA.—At a meeting of the Académie des Sciences, on December 15th, M. Pasteur announced that he had ascertained, by recent experiments, that the characteristic infective organism which is the bacteridium of Splenic Disease, and the infective organism which produces the affection known as Cholera of fowls, are both capable of supporting a temperature of 40° Centigrade below zero (—40° Fahr.), without losing their faculty of multiplying in culture-fluids or their peculiar virulence as agents of infection.

BENZOATE OF SODIUM.—Professor Klebs, of Prague, announces that the benzoate of sodium is the best antiseptic in all infectious diseases. The action of it is very powerful. It is claimed that a daily dose of from thirty to fifty grammes to a full-grown man will render the poison of diphtheria inoperative. The benzoate is prepared by dissolving crystallised benzoic acid in water, neutralising at a slight heat with a solution of caustic soda, drying, and then allowing the solution to crystallise over sulphuric acid under a bell-glass. Large doses do not appear to be absolutely necessary. Good results may be obtained by the daily administration of about twelve grammes.

DISEASES DUE TO FUNGI.—In a paper on the destruction of obnoxious insects, by Professor Hagen, of Harvard, U.S.A., in which he describes some experiments that had been made by Mr. H. Burns and others, he comes to the following conclusions: 1. That the common house-fly is often killed by a fungus, and that in epizootics a large number of insects which live in the same locality are killed by the same fungus. 2. That the fungus of the house-fly acts as well as yeast for baking and brewing purposes. 3. That the application of yeast to insects produces in them a fungus which becomes fatal to the insects. 4. That, in the experiment made by Mr. J. H. Burns, all potato-beetles sprinkled with diluted yeast died from the eighth to the twelfth day, and that the fungus was found in the vessels of the wings. He admits that further experiments are necessary to find out the most convenient method of application.

CATTLE MORTALITY IN NATAL, MAURITIUS, AND CYPRUS.—Previous to and during the campaign in Zululand, about 36,000 head of cattle were employed in the colony of Natal ; of this number about 10,000 have died of over-work, insufficient food, exposure to cold and wet, unhealthiness of camps, and disease.

The *Natal Mercury* of November 21st reports that Rinderpest, after killing nearly all the oxen and cows in the island of Mauritius, except those in the more distant part of Black River, has at length gradually extended itself to that locality ; so that it may be now said to be quite general there. The deaths will probably reach 30,000. The burying of all these deceased animals is no easy task, for hundreds frequently die on one property.

In Cyprus the same disease has been prevalent, and the movement of cattle into or out of Larnaca is prohibited.

CONTAGIOUS DISEASE AMONG BEES.—*Nature* reports that a dangerous and infectious disease among bees has appeared in Italy. It is caused by a microscopical fungus, and spreads with alarming rapidity. However, winter is not a favourable season for its propagation, and salicylic acid solution is said to be an infallible remedy against the disease.

TUBERCULOSIS AND THE MILK SUPPLY.—At a meeting of the Munich Medical Society in October last, Professor Bollinger read a paper on Artificial Tuberculosis as induced by the consumption of the milk of tuberculous cows. In the course of his remarks, he endeavoured to demonstrate that the milk of such animals has a pre-eminently contagious influence, and reproduces the disease in other animals experimented on from that point of view. He believes also that such milk, even when boiled, still retains its injurious properties. Further, he maintains that beyond doubt the Tuberculosis of the human subject though not completely identical with that of the cow, is yet strictly analogous to it, and that consequently the wide prevalence of Tuberculosis in the native herds —at least 5 per cent. of which are affected—is a standing danger to the health of the community. Seeing the enormous mortality from Consumption, more especially in towns, Professor Bollinger believes it to be of the utmost importance to urge upon all classes, and particularly upon farmers, the absolute necessity of taking every possible means of stamping out the disease among cattle. Meanwhile, some measure of safety may be secured by the rigid exclusion of all diseased stock from town dairies, a measure which forms a prominent feature in the programme of the recently-established Associated Dairy at Munich, where all the cows are constantly kept under skilled veterinary surveillance, and any that may exhibit the least symptom of Tuberculosis are at once weeded out.

ON THE LIVER FLUKE.—There is scarcely any parasite so dangerous to live stock as the familiar liver fluke, *Distoma hepaticum*, commonly enough found in the livers of sheep, oxen, and other domesticated mammalia. Hundreds of thousands of sheep fall victims to it every year. It is well known that these losses are greatest after wet seasons, and that certain pastures are peculiarly dangerous, but there has hitherto been a "missing link" in the history of the development of the fluke, the filling up of which has been long sought in scientific circles, as the best means of arriving at a knowledge of how to combat the evil. The missing link is the *habitat* of the fluke, or its *ova*, immediately before its reception into the economy of its mammalian victim, and this, we are told, has now been discovered by Professor Leuckart, of Leipzig, whose name as an authority on parasites is known throughout the civilized world, in a little mud-snail—the *Limnæus minutus*. The *Limnæus*, already infested with the *ova* of the fluke, crawls from its damp breeding-place up the stems of the grass and herbage, and thence finds its

way, together with its dangerous contents, into the stomachs of the grazing live stock. Practical experiments on this point are about to be made on sheep by Professor Leuckart, in conjunction with Professor Blomeyer, the director of the Agricultural Institute at Leipzig.

Correspondence, etc.

DR. PAQUELIN'S THERMO-CAUTERY.

To the Editor of the VETERINARY JOURNAL.

SIR,—Although Professor Pritchard recently brought this instrument before the notice of the Midland Counties Veterinary Medical Association, I think it may not be considered out of place to refer to this apparatus again, as the actual cautery is so frequently resorted to by veterinary surgeons. I should imagine that Professor Pritchard's description has scarcely been correctly reported. It is stated that the "apparatus consisted of a spirit-lamp connected by india-rubber tubing with two india-rubber balls, etc." Now, practically, these two india-rubber balls are required to propel air into the benzoline bottle, and if attached to the blowpipe fixed on the spirit-lamp, they require taking off and fixing on the benzoline bottle after the platinum point has been heated in the spirit-lamp flame; this is extremely inconvenient, for when I have tried to do it by myself I find I have to perch the point in the flame by some contrivance to keep it hot while I change the india-rubber pump from the spirit-lamp to the benzoline bottle. This is all unnecessary. My apparatus, which is the one Professor Pritchard borrowed to exhibit, has a small piece of india-rubber tubing for fitting to the spirit-lamp blowpipe, to be used with the mouth. That is unnecessary. I find myself that simply holding the end of the platinum in the still flame of the spirit-lamp, and not using the india-rubber ball pump till half a minute has elapsed, to be the quickest way of starting the process; for if air be propelled into the benzoline bottle while the point is held in the flame, it *will* require the heat of a blowpipe flame, for the platinum is rapidly cooled by the stream of cold air and benzoline vapour passing through it. The apparatus and modus operandi are as follow:—Air is propelled by squeezing an india-rubber ball, having an ingress valve, into a second ball covered with netting to prevent over-distension; this latter acts as a reservoir and renders the stream constant. From the second ball an india-rubber tube is conducted to a bottle containing a very small quantity of benzoline. The stream of air is thrown upon the surface of the benzoline, and becomes mechanically charged with benzoline vapour; the mixed gases pass out of the benzoline bottle through another tube to the handle of the operating portion of the apparatus. This latter consists of a fine tube terminating in a platinum end of whatever shape desired; this tube is covered for two fifths of its length by an ebony handle terminating in an ivory cup, and the remaining three fifths by a brass tube which joins the ivory cup and platinum point, enclosing the fine tube entering the platinum point. In the brass tube are two perforations to give exit to the gases resulting from combustion. The operating point of platinum contains an intricate coil of platinum wire. The benzoline bottle is hung to the button-hole, and the platinum point held in the still flame of the spirit-lamp for half a minute, the pumping is then commenced, and the mixed air and vapour are forced up to the heated platinum point. This causes a chemical union of the gases, with a number of minute explosions, modified by the

intricate interior coil. The heat evolved at the chemical union increases that already existing, and so the process is carried on. If fluid benzoline be allowed to run up the tube to the point, its sudden evaporation at once cools it and leaves the end choked with carbon. In damp weather the apparatus is somewhat slower to start, and I find that on a wet day in a damp shed the benzoline requires oftener changing, for moist air makes it turbid and a clear bright heat cannot be well maintained. It is necessary to keep the apparatus in a warm place to keep the rubber parts in order.

I have not the date recorded when I first used this kind of apparatus, but it was before I had obtained my diploma in 1877 ; and it was placed at my disposal by my friend, F. Purcell, Esq., M.D., of Welbeck Street. Mr. Moore introduced the apparatus to the Central Veterinary Medical Society on April 18th, 1877 ; but it is evident from the report that it was regarded more as an ingenious scientific toy than an instrument of practical utility ; no one had then, among the members of the Society, practically tested it, and it was forgotten. Mr. Moore again produced a form of the apparatus at the last meeting of the Society, and he boasted of its cheapness, having only purchased the operating portion, and fitted æther spray fittings to it ; it will, however, be found, *practically*, the instrument as sold by Messrs. Meyer and Meltzer, of 71, Great Portland Street, is the cheapest, as you have strong materials of some size, and every requisite in a neat case ; and moreover, you can operate with that confidence that nothing is "coming undone," rendering the completion of the operation no anxiety. I obtained the one recently exhibited by Professor Pritchard in September, 1877, and since then have never used any other form of actual cautery.

This form surpasses the old one by the rapidity of its action, as the cooling effect the skin produces on the plantinum is resisted by fresh heat ; the rapidity is especially noticeable in puncturing, and if care is not exercised its rapidity may lead to mischief ; it is easily used from the smoothness of the platinum, which never wastes from heat. It requires no cleaning or rubbing while in use, as an extra squeeze of the pump burns off all adherent matter. It abolishes that cruel roasting process which is, from the *size* of the old iron, necessarily inflicted on the skin contiguous to the part destroyed by the cautery, and which, when lines are drawn close together, helps to produce sloughing. *I have never had a case of sloughing after its application to the surface of the skin.* It is much less painful, as it is rapidly used and is of a clear heat, which is far less painful than a dull heat. It produces so little blemish that I think I could show about a dozen horses which require manual examination to find where it has been used. It is portable, always ready, and its value in castration is extreme as there is no necessity to get the animals near a house or a fire ; more liberties can be taken with it than the old iron, as its cauterisation is more limited and more under control, and seems to exert a happy influence over the subsequent healing ; and from the absence of a large amount of cicatrical tissue, the idea of the "permanent bandage" produced, whether mythical or not, is more likely to exist in a greater degree. Whenever possible, I use the whole of the instrument myself. This is a little awkward at first, but is easily acquired, and frequently astonishes clients by the ease which practice soon gives the operator in manipulating it ; assistants, as a rule, get immediately tired of the pumping unless they have much practice. Its cost is amply repaid by its superiority. These remarks, coming from one who was the first in this country to test practically the utility of the invention to our profession, will, I am sure, induce others to adopt a more scientific form of a useful remedy. I shall always consider mine as the cheapest instrument I ever bought.

I am, sir, faithfully yours,

London, *December*. CHARLES SHEATHER, M.R.C.V.S.

THE ROYAL VETERINARY COLLEGE *v.* PRACTITIONERS.

To the Editor of the VETERINARY JOURNAL.

SIR,—I am one of "les miserables" who signed a petition, asking for a general meeting of the profession, to consider "The advisability of requesting the Governors of the Royal Veterinary College to revise their system of subscription, and to make the practice of the institution less competitive to private practitioners."

I am somewhat indifferent whether such a meeting can be legally held or not, and have always thought that the matter under discussion could be best considered by the parties immediately concerned—*i.e.*, the Governors of the College, and those weak members who fancy they have a grievance. I am, however, quite convinced that the petition is not merely the outcome of disappointed mediocrity, or of petulant envy, but is really a true expression of the feeling that we are unfairly handicapped in our struggle for bread; and that the College, which, by the public, is supposed to represent our highest professional development, exhibits itself rather more as a trading establishment, and rather less as a scientific institution, than it ought.

We claim to have a twofold grievance—a material one, that we are undersold; a sentimental one, that we are undervalued. We ask the College not to undersell us, and we also ask them to assume for themselves a higher value, that we, by comparison, may not be undervalued. We say that the College gives its subscriber more for his money than any private practitioner can possibly afford to give, and thus not only deprives some of us directly of clients, but forces many of us to charge less than equity would allow.

The system of subscription adopted by the Royal Veterinary College differs from that of any scientific institution with which I am acquainted. The two-guinea subscription is given by noblemen and gentleman in a similar sense, I take it, to that which prompts them to subscribe to a medical school and hospital. I cannot think it is merely given to obtain forty-two shillings in return. Still less do I believe that any of the better names on the long list would confess to a desire to obtain fifty shillings or its equivalent in value. If it be said that the subscribers go to the College because they think they there get better value than they can get anywhere else, I can only reply that this may be so; but that it should be remembered that the staff of a College derives some fictitious value merely from "the connection and the name," and that this depends upon the support of the profession in sending students.

I have not a word to say in disparagement of the Royal Veterinary College, still less against its staff, most of whom I hope I may still call friends, and whom all must allow are a conspicuously able group. I have no dogmatic demand to make. Any attempt at coercion would be as stupid as it would be futile. I simply ask—Cannot the College, from its undoubted eminence, afford to consider the private practitioner a little less as a rival to be competed with? Can it not curtail, without loss to itself, the enormous privileges of its subscribers? Can it not even obtain all the necessary subscribers without offering a direct return for their money? Of course, if it can be shown that these steps would entail such pecuniary loss as to interfere with the usefulness of the institution, I am out of court—we must all live, and so must the College. If the College accepted "annual subscribers" simply as contributors to a scientific institution, I believe they would retain nearly their whole list, and I am certain that many practitioners would be glad to contribute.

Your obedient servant,

Down Street, W., *January 10th*, 1880. WM. HUNTING, F.R.C.V.S.

PRELIMINARY EXAMINATIONS AT THE ROYAL VETERINARY COLLEGE.

To the Editor of the VETERINARY JOURNAL.

SIR,—As a student at the above institution, may I crave space to bring this matter before the powers that be? It seems to me that Preliminary Examinations, *i.e.*, examinations conducted by the teachers prior to a student presenting himself at Red Lion Square, are unnecessary. They interfere considerably with a man's studies, taking up time which might be better spent, and inflicting on the student mind a suspense incompatible with calm application to his books. They would be rendered less necessary by having more "grinds" in the theatres; thus enabling the teachers to pick out the dull men, and devote a little more attention to their instruction; whereas at present they are only selected and put back at the end of the session. I think if the *private class* system were transferred to the class-rooms, good would come of it. I must say when I received a prospectus of the College, I read that an education was given for thirty-six guineas, nothing being said about private classes at fees amounting to twelve guineas per annum. In the City, important omissions from prospectuses sometimes come under notice, and offenders incur the displeasure of the blindfolded lady with the scales. Of course, it may be said it is optional on the part of a student to join a "private class." But what an option! The first three words in this letter will explain why I must, on this occasion, sign myself

Royal Veterinary College, *Dec. 29th*, 1879. "NEMO."

OUR AMERICAN COUSINS.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—The pages of the January number of your *contemporary* are literally inundated with *matériel Americain*. From the pen of Mr. J. H. Steel we have a comprehensive synopsis of the present state of the veterinary profession in America, which at least demonstrates one thing, viz., the great need of an amalgamation of the various licensing and title-giving bodies into something analogous to our Royal College of Veterinary Surgeons. One is apt to get confounded with their titles, such as D.V.S., B.V.S., D.V.M., V.S.E., V.M., etc. Mr. Steel's article is in general correct, and affords the profession in this country a good idea of the state of matters in America. He is, however, incorrect in saying that Mr. J. A. Going, V.S., New York, is not an M.R.C.V.S., as he might have seen in the pages of the *Veterinarian* for December last, where he would also have discovered that Mr. C. P. Lyman, whom he styles V.S.E., is also an M.R.C.V.S. Mr. Steel will likely hear of these errors from the parties interested.

An American M.D., Mr. G. W. Bowler, V.S., treats the readers of your *contemporary* to a string of rambling remarks on the "Castrating Ecraseur," and makes light of the celebrated "Farmer Miles," and still more so of the English veterinarians who patronised him. I can well believe Dr. Bowler's assertion, that there is no great secret in using the ecraseur in castration, and that any practical man may safely use it, even although he has never previously seen it in operation. Have we not all many things to do that we never saw before?

I cannot, however, coincide with the Doctor that the ecraseur idea originated in America, neither can I credit that it is so very infallible, and so pre-eminently superior to all other methods. I believe the ecraseur has long

been used in France in castration (*vide* Peuch et Toussaint's Surgery); I am also aware that it was used for a great many years by the late Mr. Prentice, of Longford, Ireland; so that the Doctor's bombast about having inaugurated its use must fall to the ground. In like manner his assertion of its infallibility—for does not even the ubiquitous Farmer Miles allow that he—even he—loses a small percentage? and farther, that hæmorrhage will, at times, follow the ecraseur?

Mr. Gerrard, of Romford, mentions having seen two colts castrated by Miles, which bled severely, and several others that got very much swollen after the operation. Mr. Gerrard candidly says that he prefers the torsion forceps to the ecraseur, and so do I, by a long way.

The French, on the whole, don't favour castration by ecraseur, and one of their reasons for this is, that owing to the necessity of operating *very slowly* with the ecraseur—to prevent crushing and tearing the vascular cord too hurriedly, and thus causing hæmorrhage—the animal is subjected to prolonged and extreme pain; in fact, the operation is characterised as being "*très douloureuse!*" In the operation by torsion, on the other hand, however long the act of torsion may be necessary, it is not felt by the subject, owing to the isolation by the grasp of the clam on the cord.

I should say that the hæmorrhage occurring after Miles must arise from his extremely quick manner of operating. About hæmorrhage, however, he seems to care little, nonchalantly remarking "They won't die!" Now, this may be quite true, but it is very unprofessional, and utterly disagreeable.

As for "bleeding to death" from the cord, I don't think it altogether possible. A friend of mine in Oregon, U.S.A., was bothered with a four-year-old half-bred stallion, about 15½ hands, belonging to one of his neighbours. Having one day found him making friends with some young Clydesdale mares, he lassoed him, hitched him close up to a post, drew one hind leg forward to same post, and then quite coolly slit out first one and then the other testicle, *and cut both clean off without any ceremony.* Thereafter the brute was unhitched and set free. The blood was flowing in oceans, but he at once bolted off like the wind! My friend did not see him again for a fortnight, by which time he was all right and in grand spirits.

I am digressing, however, and must again return to our American *confrère*, Dr. Bowler, V.S., who, after disposing of the ecraseur, proceeds to attack "Britishers" who treat Colic with Sp. Ether, Nit. et Op. Tinct.; Rheumatism with aconite and belladonna in homœopathic doses, and themselves with whisky in allopathic doses! This part of the Doctor's letter I consider simply below notice, and I trust the parties attacked will treat it with silent contempt.

Faithfully yours,

Banff, 14*th January*, 1880. A. E. MACGILLIVRAY.

THE RESPONSIBILITIES OF VETERINARY SURGEONS.

To the Editor of the VETERINARY JOURNAL.

SIR,—The excellent paper read by you at Manchester, relative to the responsibilities of veterinary surgeons, has proved the exciting cause of some voluminous and somewhat remarkable letters, which have appeared in the "Correspondence" columns of the VETERINARY JOURNAL, and which, in my humble opinion, treat of subjects that have no special application to veterinary surgeons, *as such*. A person ignorant of the character he defames may deny that a veterinary surgeon possesses moral rectitude; but surely a member

of the profession is better informed, and need not occupy the space of your Journal by repeating such slander, as if he himself believed it to be true. And it seems equally unnecessary to disprove such assertions in *writing;* for every day's experience of the public who transact business, or otherwise associate with veterinary surgeons, affords the test by which we shall be judged. To condescend to argument for the purpose, is, to my thinking, unnecessary if not dangerous, as it may be considered that we are less confident than we really are of the result, should our reputation rest upon the test of experience alone, referred to above. It is very easy, besides, in writing, to convey wrong impressions. For instance, one writer, after ably proving that veterinary surgeons are deservedly held in esteem by the public, proceeds to give advice as to how veterinary surgeons should act in law cases. He writes, "They should, when they are in the right, stand by each other." An enemy might well say, "What need is there to tell honest and independent men to do that? because, in the case supposed, to do right they must of necessity stand by each other." The natural instincts of the honourable man would demand that he should do and say what is right, for its own sake, and not simply for the sake of standing by his professional brethren. I admit that to be united in opinion is very desirable, but we must not put the cart before the horse in our principle of ethics, or a watchful public will soon detect the flaw in our armour of morality, and be very ready to suspect that its foundation is no deeper than selfish expendiency, instead of the solid rock of right and truth, as evidenced in daily life in all our dealings with our fellow-man. I feel sure all your correspondents, for whom I feel great respect, will pardon the above remarks. I remain, dear sir, yours faithfully,

January 2nd. "A."

ON DISEASE OF THE MUSCLES OF THE HIND LEGS OF COWS, FOLLOWING PARTURIENT APOPLEXY.

To the Editor of the VETERINARY JOURNAL.

DEAR MR. EDITOR,—On again perusing your valuable Journal this evening (no professional brother enjoys cogitating over its contents more than I do, greatly to my own interest it frequently proves), allow me to make a few practical remarks on the disease of the muscles of the hind legs of cows after calving. I have successfully used, during the past twenty years, the galvanic battery, and where within a reasonable distance from home, give two strong applications a day. Where so done, I always had my patient up in three days, and when at a distance too long to traverse twice in the day, have used it only once for fifteen minutes at a time. I never had a case in my humble experience that was not able to perambulate its byre or box on the fifth day, so would urgently advise your correspondent "Cyclop" to adopt this plain and simple remedy, which, I can honestly assert, has not failed in my hard-working country practice for over twenty years, since I adopted this mode of treatment.

Believe me, faithfully yours,

Kingston-on-Thames, *Dec. 6th*, 1879. WILLIAM FURNIVALL.

AN UNWARRANTABLE REPROACH.

To the Editor of the VETERINARY JOURNAL.

SIR,—At a recent meeting of the Scottish Metropolitan Veterinary Medical Association, a committee was appointed to issue circulars to the holders of the Highland and Agricultural Society's veterinary certificate, urging them

to obtain the diploma of the Royal College of Veterinary Surgeons. One of these circulars, intended for Mr. George Simpson of Liverpool, who obtained the certificate in 1842, was, by mistake, addressed Seel Street, and so reached a destination which is explained by the following letter :—

70, 72, and 74, Seel Street, Liverpool,
January 1st, 1880.

The *Committee* of the Scottish Metropolitan Veterinary Medical Association.

GENTLEMEN,—I beg to return the enclosed circular, as my name is not George. If you will take the trouble to look over the *regestar*, you will find that I obtained, by examination, the diploma of the Royal College of Veterinary Surgeons in the year 1866.

I am proud to state that it is seldom the pupils of the Royal Veterinary College, London, find it necessary to purchase their diplomas.

I am, gentlemen, yours truly,
THOMAS SIMPSON.

One hears a good deal at present about the disunited state of our profession, and also much complaint that we are not accorded that position in public opinion which, as a scientific body, we deserve. The foregoing letter makes it evident that the desire for unity is certainly not universal, and on receipt of it I could not help thinking that the public estimate of some members of the profession must be very low indeed to warrant any such complaint in their case.

Mr. Simpson might, with less irrelevancy than is displayed in the last sentence of his letter, have informed us what institution had the honour of superintending his general education.

I commiserate the schools which are denied the pride of claiming Mr. Simpson as an *alumnus*. I am, sir, yours, etc.,

Edinburgh, *January 9th*. J. MCFADYEAN.

A LAPSUS PLUMÆ.

To the Editor of the VETERINARY JOURNAL.

SIR,—As author of the paper on "Indian Remount Depôts," in the *Veterinarian* for December last, allow me to apologise to your correspondent for the obvious *lapsus plumæ* he complains of at page 864. I should have thought, however, such pleasant criticism would be considered rather an intrusion on the valuable space of a scientific journal—it might, perhaps, be admissible in the pages of *Punch*.

Yours obediently,
CHAS. STEEL, V.S.,
16th Lancers.

Brighton, *January 8th*.

COMMENTS:

AT the discussion on Animal Vaccination, which took place in London recently, some extraordinary notions were ventilated with regard to Variola in animals, and animal diseases in general. Veterinary pathologists will be rather startled to hear that there are only two kinds of Variola—human and ovine; that Vaccinia is merely human Variola modified by the cow, though all attempts at producing the former by inoculation with the virus of the latter have failed in latter days, but was easily accomplished formerly; that Chauveau is a foreigner, and therefore untrustworthy; that horse-pox has only been observed by incompetent foreigners; and that only those present at the discussion knew everything relating to the variolous diseases of animals. The most amusing speaker

was perhaps Dr. Crisp, who pretended to a most intimate acquaintance with animal disorders, made most astounding revelations with regard to the transmissibility of a host of maladies—Glanders among them—from *cattle* to mankind, and spoke of *entozootic asthma* of bovines as likely to be communicable to man! Will anybody tell us what *entozootic asthma* of the cow really is? The doctors sadly need some one among them to inform them as to disease in animals, and especially Variola. Foreigners, of course, would have to be excluded, and native evidence alone admitted; though little or nothing is known of foreigners and their labours, yet as ignorance of these appears to be bliss, the folly of being enlightened by their means is obvious.

ANSWERS TO CORRESPONDENTS.

V. S. AMBLESIDE inquires if we ever knew of an instance in which a bitch, suffering from the dumb form of Rabies, showed signs of œstrum at the same time. He attended one recently which exhibited the usual symptoms of Rabies, but the vulva was congested, and she frequently licked the part and then commenced howling. The symptoms of Rabies may certainly appear while a bitch is in "heat," the development of the malady offering no impediment to the evolution of the œstral process, as it offers no hindrance to the course of pregnancy.

JUNIUS.—We cannot give any information as to the number of unqualified men who adopt the title of Veterinary Surgeon in this country; but it must be large.

ARMY VETERINARY SURGEON.—We certainly think all Army Veterinary Surgeons should avail themselves of their privilege, and vote for members of Council who will represent their interests, as well as those of the profession generally. It is not necessary to vote for six persons, and if it is desired to return only one or two in particular, then vote only for these. Voting papers may be obtained of the Secretary, R.C.V.S.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. McFadyean, Edinburgh; J. C. Dwyer, Royal Horse Artillery, Woolwich; J. Moore, London; G. Evans, Army Inspector, Simla; "Nemo"; "A Candid Student"; "A"; A. E. Queripel, Royal Artillery, Rawel Pinde; F. F. Collins, Principal Veterinary Surgeon, Simla; C. Steel, 16th Lancers; C. Clayton, Royal Artillery, Kandahar, Afghanistan; S. Locke, Manchester; G. A. Banham, London; "V. S."; J. P. Whitehead, Ontario; J. Mills, Royal Artillery; T. Barker, London; T. Walley, Edinburgh; R. Sowerby, Hull; J. McFadyean, Edinburgh; J. Wilson, Nantwich; A. E. Macgillivray, Banff; R. Keele, Ealing; W. Hunting, London; G. Mitchell, Melbourne; "Army Veterinary Surgeon."

BOOKS AND PAMPHLETS: Cruelty to Animals, Acts of Parliament and Suggestions; *F. A. Zürn*, Massenerkrankung von Schafen, etc; *O. Bollinger*, Ueber Animal Vaccination; Dritter Jahresbericht, etc., über de Verbreitung Ansteckenden Thierkrankheiten in Preussen; *A. Zündel*, Die Druse der Jungen Pferde; Investigation of the Diseases of Swine and Infectious and Contagious Diseases among Animals in America.

JOURNALS, ETC.: *Annales de Méd. Vétérinaire; Nature; Der Thierarzt; Lancet; Recueil de Méd. Vétérinaire; L'Echo Vétérinaire; Journal of the National Agricultural Society of Victoria; Annales de Méd. Vétérinaire; Der Thierfreunde; Live Stock Journal; Archives Vétérinaire; Deutsche Zeitschrift für Thiermedicin; Wochenschrift für Thierheilkunde und Viehzucht; Lancet; Medical Press and Circular; Nature; Microscopical Journal; American Veterinary Review.*

NEWSPAPERS: *Montreal Gazette; Roscommon Herald; Globe; Lahore Civil ana Military Gazette; Paper and Print; Roscommon Messenger; Irish Times; Roscommon and Leitrim Gazette; Scotsman.*